THE LANCET.

No. 162.] LONDON, SATURDAY, OCTOBER 7. [1826-7.

THE

INTRODUCTORY LECTURE

TO A COURSE OF SURGERY,

DELIVERED BY

Mr. LAWRENCE,

AT THE

New Medical Theatre, Aldersgate-street.

GENTLEMEN,

Mr. WARDROP and myself have undertaken to deliver, in this Theatre, a course of Lectures on Surgery; understanding that term in its most comprehensive acceptation, as including a knowledge of the nature and treatment of all the affections, which custom has assigned to the care of the Surgeon.

SURGERY is one division of that science and art which relate to disease. This science, considered generally, embraces the physical history of man; it investigates the human organization under all the various modifications impressed on it by surrounding influences, whether necessary or accidental, and draws from this source the rules for preserving health and removing disease. The practical application of these rules constitute the *art* of healing, or rather of treating disease, while the assemblage of facts and reasonings, on which the rules are founded, composes the *science* of medicine. Independently of its useful results, in reference to health and disease, medicine would be one of the most interesting studies, as man himself is the subject of it; and hence it occupies the first rank among the natural sciences, being at the head of those which relate to the animal kingdom.

To denote the entire mass of knowledge just described, we must be contented to use the word MEDICINE, although it is equivocal, being frequently employed in contradistinction to SURGERY. We may avoid ambiguity by employing the word PHYSIC, to denote that part of the medical profession which is exercised by the physician.

The boundaries of surgery have not hitherto been, and perhaps cannot be accurately defined; and the line of demarcation between it and physic is more especially obscure and unsettled. In our view of the matter, however, SURGERY includes all injuries; nearly all external diseases, and most of those internal ones, which produce changes recognisable externally; and all which require operations, external applications, or any kind of manual treatment. The rest of medicine belongs to the physician.

You will probably think the distinction, as now explained, rather indefinite, and wish to know the grounds on which it has been established—the inherent essential differences between surgery and physic, which require that they should be exercised by different persons, and taught by distinct teachers in separate courses of instruction. You will inquire what strongly-marked difference, or rather what natural incompatibility between these two branches of one science can have rendered it necessary that there should be two public bodies to watch over them—a College of Physicians and a College of Surgeons? I consider the distinction altogether artificial; it originated in a period of barbarism and ignorance; it has been upheld by a blind deference to authority and established usage; and, although the same causes, together with the real or supposed interests of certain established bodies, may protract its existence a little longer, it has received a fatal blow from the recent progress of medical knowledge, and the clear light which that has thrown on the subject.

The numerous individual organs which make up the human body, vary in composition, structure, and office; yet they are intimately connected as subordinate parts of one machine, and they concur in the production of one general result—the life of the individual. Our notion of any part would be very limited and imperfect if we examined it in an insulated state; and we should be entirely unable to estimate its living action,

unless we viewed it in its relation to the rest of the organisation. In the connected series of motions, which are constantly carried on in the animal body, each function, in relation to those which precede and follow it, is successively cause and effect; and the various parts exert other mutual influences, which we know only by their effects, and denominate sympathies. Hence the expression of Hippocrates, in relation to the human body, is perfectly correct: *Labor unus; consentientia omnia.* "One exertion; all parts concurring."

As the animal machine, although complicated in structure, is single; and as its living actions, although numerous and intricate, form one indivisible series; so a similar connexion runs through those changes of structure and functions, which constitute disease: hence there is *one anatomy* and *physiology*, and there can be only *one pathology*. The connexions and mutual influences are indeed more obvious in disease than in health; the play of the machinery escapes notice in the silent and imperceptible motion of the perfect state.

It must be the first business of the medical student to learn the structure of the human body, and its living actions; that is, to study man in the state of health. He then proceeds to the observation of diseases; he watches the circumstances under which they arise; he explores the organic changes which they produce, and determines the external signs or symptoms of these changes; deriving from these comparisons the means of distinguishing the exact seat of disease, and of predicting its course and event. He is then prepared to employ the external agencies, the outward or inward remedies, or the operative proceedings which may be necessary for removing disease and restoring health. When disease is studied in this manner, in reference to the whole body, it constitutes the science of *general pathology*; as a similar investigation, directed to any single organ, is the *pathology* of that part.

To assert that surgery and physic are essentially distinct, is to say that there are two kinds of pathology; that the external and internal parts are to be treated on different principles. You will immediately see that this notion is entirely unfounded; that the position of a part in the body may cause variations in the mode, but cannot alter the principles of treatment; that inflammation, for example, must be treated by the same means, whether it be seated in a joint, testicle, or eye, in the heart, lungs, liver, or bowels.

The principles of pathology are general; they are the same for all parts of the medical art; they are the result of our knowledge of all disease, and consequently common to the physician and surgeon. No branch of medicine can be thoroughly understood, except by him who has carefully scrutinized the structure and actions of the whole frame, and then extended his view over the whole field of medical science. Thus the opinion of Celsus, on a more limited question, is applicable to medicine generally; *Atque ubi se diviserunt, eum laudo, qui quamplurimum percipit.* "Since these divisions have been established, I commend him who embraces the greatest number of parts."

Various views have been taken of the distinction between physic and surgery; but none of them will bear examination. Internal diseases have been assigned to the former, external to the latter. But who will describe the boundary? Is the domain of surgery to extend half an inch or an inch deep? Are the diseases of the nose, mouth, fauces, larynx, and pharynx, external, or internal? Are the bones and joints external parts? The swelling of a hernia is indeed external, but we must expose the belly and its contents, if we come to the operation, and the great risk, both in the disease and the measures employed to relieve it, is of internal inflammation. When we look at the nature and causes of disease, the absurdity of this distinction is still more apparent, and the inseparable connexion between the exterior and interior of our frame more obvious. In gout, rheumatism, erysipelas, carbuncle, we have external inflammations dependent almost entirely on internal causes. Again, external agencies are equally powerful in producing inward disease; as we see in the rheumatic and catarrhal affections, the inflammations of the chest and abdomen, brought on by cold, by moisture, by particular states of the atmosphere, by changes of clothing. It is in vain then to establish separate professorships of internal and external pathology, to institute distinct colleges of physic and surgery, and to teach them as separate sciences. Lecturers and writers cannot make the distinction, and thus we find the same diseases considered by the teachers of physic and surgery; comprehended in the writings of both; illustrated by both on the same principles, and treated by the same means.

Some have proposed to assign local diseases to the surgeon, and general ones to the physician. This arrangement would bring the whole nosology into the department of surgery. Are there any general diseases, in the proper acceptation of the term? When the affections called general are closely investigated, we find that they originate in, and are kept up by, local injury or disease. All parts of our frame are not of equal importance in the economy, and all states of disease do not produce the same effect in impeding the function of the organ

itself, or deranging the action of other parts. When a part of little consequence in the animal economy is slightly diseased, no sensible effect may be produced beyond the part itself; if, on the contrary, an organ of great consequence is actively diseased, the whole body, or at least a great proportion of it, feels the influence; and hence arise what are called general affections. Even in fever, we can clearly trace the general disturbance to a local origin, in ninety-nine cases out of a hundred; so that the very existence of fever, as a general affection, has been questioned, and it seems highly probable that the question will be ultimately determined in the negative. The difference, therefore, between *local* and *general* diseases, is merely in degree, not in kind; it is a difference of more or less. If we were to arrange diseases in one column, beginning with the most local, and ending with the most general, we should fill up the interval with others that would form an insensible transition between the two extremes. Where could we draw the line across, to divide surgery and physic, on a scale thus constructed?

As, on the one hand, we may deny the existence of *general diseases*, in the sense of *universal affections of the frame, not originating in, or connected with, marked and preponderating disorder of some organ or system*; so we shall, on the other side, reduce the catalogue of *local* diseases within the narrowest limits, if we confine the term to *those cases, in which the influence of the cause, of the disease and of the treatment, is strictly confined to the part.* The great majority of the diseases universally recognized as surgical, are not *local* in that strict sense.

The etymological import of the term SURGERY, which is *manual operation*, has led some to restrict us to the diseases, which are to be treated by operation or other manual proceedings. Such a notion is worthy of the ignorance to which the unnatural separation of surgery and physic owes its origin, and of the dark period in which it occurred. Could such an attempt have entered into any mind, even moderately enlightened by the recent progress of science? Could any person, who had paid even slight attention to the structure and diseases of our frame, have entertained the absurd notion of establishing an important professional distinction, not on any difference in the causes and nature of the affections, but on the accidental and often varying circumstance of the means employed for their cure? Apoplexy, and various other cerebral affections, and the numerous inflammations, both of internal and external organs, are treated by bleeding; are they, therefore, to be deemed surgical? Shall we include, in our list, all that are treated by cupping, leeches, blisters, plasters, liniments, poultices, fomentations, and washes? And what shall we do with the cases requiring both external and internal means?

Again, operations constitute the smallest part of the surgeon's occupation. It is the boast of modern surgery, to have greatly diminished their number; and an improved knowledge of the nature and treatment of disease, will, probably, effect a still further reduction. Many surgeons, in considerable practice, operate but seldom; and it would require a large city or district, to furnish operations enough for the sole employment of one surgeon.

Thus, whatever view of the subject we may take, the same conclusion presents itself to the mind with irresistible evidence; namely, that there is no natural distinction between surgery and physic; that they are merely parts, and inseparably united parts, of one science and art; that the practical principles rest in both, on the same scientific foundation; that the two branches of the profession must, in most instances, adopt the same proceedings, because they have the same purposes to accomplish, while their occasional differences are merely unimportant modifications in the means of arriving at the same end. The distinction then turns out, at last, to be a matter of usage, and no longer maintainable, except by those who content themselves with the mere surface of things, or by others, who may be determined to find reasons for upholding established custom, whether right or wrong, when their own interests are involved.

In failure of better arguments, the analogy of the mechanic arts has been resorted to, and the beneficial effects of the subdivision of labour, have been absurdly pressed into the service. The cases are not parallel. The construction of a pin can be divided into eight or ten processes, each of which, being totally independent of the rest, can be more rapidly and perfectly executed by an individual who practises it alone. Hence the end is accomplished of producing pins, both better in quality, and more abundantly. Can the mind conceive a stronger contrast than that which is exhibited between a mechanic, whose education consists in learning, and whose life is spent in practising the art of making the point, or adjusting the head of a pin, and a medical practitioner, who must first store his mind with several important branches of knowledge, and then apply the principles thus acquired, to the ever varying circumstances of individual cases?

Some parts of medicine are, indeed, mechanical, and capable of reduction to fixed rules; these are executed more perfectly, and, consequently, more advantageously to the community, by individuals who practise

them exclusively; this is the case with cupping, with the application of machinery, in certain states of disease and deformity, and with the principal portion of the dentist's art.

But medicine itself, or the science of disease in general, is one, and indivisible; it can only be successfully cultivated as a whole. The disease of any particular organ can only be elucidated and successfully treated by those pathological principles which are deduced from a survey of the whole field of medical science. Hence exclusive practice on diseases of the eye, the ear, the skin, or other parts, however profitable to individuals, has never been beneficial to science.

Unfortunately for us, these artificial distinctions are not only countenanced, but carefully upheld by those public bodies to which royal charters, or legislative enactments have confided the regulation and superintendence of the medical profession. The universal experience of mankind shows that the purposes, for which such institutions are established, are seldom accomplished; while the powers and privileges bestowed on a particular body, are invariably exercised, not for the advantage of the community, but for the real or supposed benefit of the favoured persons.

The London College of Physicians, instituted by a monarch more famous for lust, violence, and cruelty, than for medical knowledge, possesses great and extensive powers, which have been often used as instruments of monopoly against well qualified persons, though they either are inadequate to protect the public against the rapacity and ignorance of empirical impostors, or have not been employed for that purpose. The enlightened members of this corporation have had the good sense to yield to the spirit of the times, and for many years have ceased to enforce those prohibitive and restrictive powers, the exercise of which, to their full extent, would be impossible in the present state of public opinion. After witnessing, with satisfaction, this proof of moderation and judgment, how must we be astonished at finding that this College will admit no one as a fellow or licentiate, who is a member of any public surgical body! The stain of surgical knowledge must be wiped out, as far as it can be, by a formal act of disfranchisement, before an individual, who has been thus once polluted, can be admitted into this chosen band of pure physicians! When surgeons and barbers formed a legal and professional brotherhood, as they did in this country, until the reign of George II., the physicians, being men of superior education, acquirements, and rank, showed only a proper self respect, in declining all intercourse with them. The public will probably doubt, whether the same conduct is wise and dignified, or even politic, when all the circumstances are completely changed; they will question the real grounds of superiority, when they see so strange an attempt at supporting it; when they witness, what I believe has no parallel, a learned body placing an exclusion on knowledge, and thus, bestowing a direct premium on ignorance! But in what light can we regard such a regulation, when we know that nearly the whole of the clear evidence, on which medical science rests, is derived from the practice of surgery?

The London College of Surgeons, being only 26 years old, and having indeed been partially regenerated four years ago, has none of the claims to respect from its antiquity, which its elder sister might plead; and, fortunately for us, is entirely destitute of power, the legislature having rejected with deserved contempt, its various applications for enlarged authority and penal restrictions. In opposition to the spirit of the age, and regardless of the signs of the times, they lately enacted, in their own favour, a code of restriction and exclusion, which they have just abandoned in part, and with a bad grace, at the loud and unanimous call of public indignation. I trust they will be compelled to give up the rest of their unjust regulations, and particularly the iniquitous exclusion of certificates from county hospitals. They may thus regain what they have now completely lost, the respect and confidence of the body over which they preside, and of the public; and they may then hope, by adopting an entirely new course, to make the college worthy of that profession of which it is nominal head.

Not contented with these two Colleges, our legislature has lately given a third head to the medical profession; having metamorphosed, by Act of Parliament, a trading company, who keep a shop for the sale of drugs, chemical and pharmaceutical preparations, into a sort of college or learned corporation, called the Society of Apothecaries; and have armed them with powers, of no very contemptible character. Whether the keepers of this shop were fit for their new office, and whether there were any real grounds of public benefit, in the shape of evils requiring remedy, or of advantages to be procured, seem not to have been matters of formal inquiry. The lawmakers could know little or nothing of the subject; and thus they enacted the kind of law, which we may expect to see when individual interest is brought to act on ignorance.

It may be doubted whether laws are capable of aiding the progress of medical science. The public bodies in this country have certainly done no good; while the

artificial distinctions, the prohibitions, and restrictions, which they have so much delighted in, have been palpably mischievous. The great progress which surgery has made here in the last quarter of a century, is clearly due to individual exertion, and to the patronage which a more enlightened public has bestowed on those who have become distinguished by talent and knowledge. The public bodies, instead of leading the march, have been always found in the rear of advancing knowledge. They might have attempted to lessen the evils of quackery, to protect the public against the knavery and ignorance of unprincipled men; but they have only been struggling to maintain their own privileges, to exclude and depress competitors, to fortify their own monopoly, and thus secure their own trading advantages. Can we wonder that such proceedings are viewed by the public with contempt, and that they tend to degrade an honourable profession?

If I were to propose a legislative enactment on the subject of the medical profession, it should be short, and confined to the single point of preventing uneducated and unqualified persons from practising. I would appoint an examining body, to be composed of the most eminent professional characters, without any regard to the present artificial distinctions, and empower them to make an efficient examination of all candidates:—the testimonial granted after such an examination, should authorise the individual to practise any or all parts of medicine, and none should be allowed to practise without it.

This plan, which is recommended by its simplicity, has been already adopted, with the best success, in other countries. There is one school or faculty of medicine, one education, and one examination, in France; after undergoing the latter, the individual may practise surgery, or physic, or both. It is the same in the United States of America; and, I believe, nearly so in the Universities of Germany. In some of the latter, surgeons are not only required to perform the same course of study as physicians, but to include, in addition, certain branches of knowledge relating to the duties that are deemed strictly surgical.

The first object of the surgical student should be, to become thoroughly acquainted with the structure and functions of the human frame; indeed *anatomy* and *physiology* are the bases of all medical science. This truth is now universally recognised; and the only question is, what amount of anatomical and physiological information may be necessary. To the *science* of medicine, the deepest insight into the animal organization is absolutely necessary; the *trade* may be carried on with a small share of such knowledge. It has been strenuously argued, that minute acquaintance with anatomy is not necessary to a physician; if this be true, we shall begin to doubt whether physicians are necessary to the community. To the surgeon, however, the most intimate acquaintance with all the details of the human organization is absolutely essential, as a preparation for his ordinary duties. Without it, he cannot determine the seat and nature of disease; he cannot distinguish between the affections of contiguous parts; he cannot understand the varied nature and appropriate treatment of injuries; nor can he proceed, without danger to the patient, and equal risk to his own reputation, to perform the operations of surgery.

Mr. Tyrrell will unfold, in his lectures, the details both of general and descriptive anatomy; that is, he will explain the nature and properties of those elementary structures, the combinations of which build up the various organs of the body; and he will describe the form, position, and relations of these organs. His assistants, Mr. Quain and Mr. Coulson, who have devoted much time to professional study on the continent, will introduce to your notice all the improvements in anatomical teaching, which they have collected in their intercourse with the most eminent anatomists of France and Germany.

Physiology, or the science of life, is too important a subject to be passed over slightly, or thrown in as a kind of make-weight, to a course of anatomy: it demands a distinct consideration, and will afford ample matter for a course of lectures. Dr. Roget proposes, by embracing comparative as well as human physiology, to exhibit a general view of the science of life, which you will find equally instructive and interesting. This mode of treating the subject is more particularly necessary, because comparative anatomy has furnished numerous and important illustrations of human structure, and physiology has been principally elucidated by the dissections of animals and experiments on them.

Anatomy and physiology do not, however, teach disease; that must be learned by observation. You must closely watch the altered functions during life, and ascertain the organic changes by dissection after death. Your anatomical and physiological knowledge will be most useful in enabling you to understand disease. If you do not know the healthy structure, how can you appreciate the changes which pathological anatomy unfolds? How can you refer the symptoms, or altered functions, to the organic changes which have produced them? The general doctrines of disease and treatment, can only be judged by the lights of

anatomy and physiology; the greatest portion of medical theories is obviously unable to bear this scrutiny, and may therefore be at once dismissed.

The wards of an hospital are the best schools of surgery; and clinical study, under the guidance of a competent teacher, is the best mode of learning. The facts, thus presented to the senses, make a much stronger impression than any description; the progress of the case brings opinions and explanations to the test, and determines the value of the treatment which has been adopted. The immediate appeal to nature, which the presence of the patient affords, and the close attention of intelligent students, supply at once a salutary excitement and restraint to the surgeon. To secure these advantages in their full extent, instruction should be strictly *clinical*, that is, given at the bed-side of the patient. If the teacher lectures without the presence of the patient, and to those who may not have seen the case, it is merely an ordinary affair of oral instruction. As a surgeon of St. Bartholomew's Hospital, I have always endeavoured to explain diseases in this way, and I shall continue in that Establishment to illustrate, clinically, the doctrines which will be laid down in this theatre. When cases of interest present themselves, either to Mr. WARDROP or myself, we propose to mention them to you occasionally after the regular lecture.

Lectures on surgery are only auxiliary to the practical study of disease; without the latter, they can be of no avail, while close observation of disease and diligent study of good books would answer the purpose very well without lecturing.

Too much importance has been attached to Lectures; and the long continued habit of attending them, seems at last to have produced the belief that medicine can really be learned by them. This is a great mistake. The medical sciences rest on observation, and are only to be acquired by resorting to nature. The great number and intricacy of the phenomena, are additional reasons why we should examine for ourselves, and not take the facts at second or third hand. A few cases attentively observed, will teach you more than any lectures or books. If you attend to nature with an unprejudiced mind, you cannot go astray. Lecturers and writers often copy from each other, without resorting to the fountain of knowledge. Can we wonder that they frequently mislead and deceive, instead of instructing? This plan of teaching by lectures would be thought very absurd in other departments of knowledge, as in painting, architecture, or any of the mechanic arts. It is not at all more rational in medicine.

A course of Lectures should contain a general, but not minute exposition of the science; a discussion of the principal doctrines, a methodical arrangement of the subject, and a collection of knowledge from various quarters, so as to exhibit the present state of the art. We shall endeavour to accomplish those objects. Our plan will be understood from the prospectus. The arrangement we have adapted will enable us to divide the labours of the course without impairing its unity.

Your study of disease, both in nature and in books, should embrace the whole range of the subject. To all, who are to act as general practitioners, this is obviously necessary; they will hardly meet with two or three cases in a hundred requiring a treatment strictly surgical. I consider a comprehensive acquaintance with the entire circle of medicine equally essential to those who mean to practise surgery only. I have shown you that surgery and physic cannot be separated in the study, although they have been forcibly disjoined in the practice of medicine: they touch each other at all points. If the *pure* surgeon is to rank higher in public estimation than the general practitioner, will he rest his claim to this superior dignity on the circumstance of possessing a lower amount of knowledge? The *manual* part of surgery is far less important than the *medical*. If we are to be confined to operations, plastering, bandaging, and the other mechanical parts of the profession, let us cease to trouble ourselves with minute researches into organization, with the study of physiology, and pathology; we shall then be fitted to resume what we have not so very long abandoned, our fraternity with the barbers. When a patient with a compound fracture becomes feverish, when a wound of the abdomen or chest causes inflammation of those cavities, when a blow on the head excites inflammation of the brain or its membranes, when erysipelas supervenes on a local injury or disease, the surgeon, who is ignorant of medicine, cannot treat those cases; for the medical means are every thing, and the merely local treatment of little importance. The physician expressly abandons all consideration of the *local origin*, and carefully proclaims his ignorance of it; shall the surgeon follow his example, and pride himself on being ignorant of the *general effects* of the mischief? On this plan, every patient must have two medical attendants, a surgeon and a physician. This arrangement, arising out of the ignorance of both, which renders each less fitted to perform properly the duties that he professes to understand, would therefore be as injurious to the person, as to the purse of the patient; and, in my opinion, by no means honourable to the profession.

Although I maintain the unity of medicine as an object of study, and am convinced that no part of it can be thoroughly understood and successfully practised without the aid of those principles, which are deduced from a comprehensive survey of the whole, I do not assert that the opinion that each member of the profession should practise all parts. The ample field of medicine will occupy numerous cultivators, and its several parts afford scope for selection, according to various tastes. I contend, however, that the practitioners of each department should be able to do all that may be necessary for their patients, or, at least, that surgeons ought to be competent to the entire management of surgical cases, without the assistance of any other practitioners. The advantage of the patient, and the respectability of the surgical profession, equally demand this.

The history of surgery need not detain us long. Except as matter of curiosity, there is nothing worthy of attention before the beginning of the last century; and we could advantageously spare all the previous writings. The Greeks knew nothing of anatomy, and were therefore necessarily ignorant of physiology. Even their ingenuity and powerful intellect could not surmount this disadvantage, although they were excellent observers, and carried the knowledge of disease as far as unaided observation could reach. The Romans were equally destitute of anatomical knowledge, until the time of GALEN; and it is probable that he had never dissected the human body. The Arabians merely copied the Greek and Roman writers.

Although medicine, even at an early period, was more subdivided than it is at present, the distinction between physic and surgery, does not appear in the old writers, who treat indifferently of both. The separation of surgery, which then consisted of a few mechanical processes, from physic, can only be traced back to the 12th century. At a time when the perversion and abuse of religion were deluging Europe with blood, it was declared by a general council, that the church abhors the shedding of blood—*ecclesia abhorret a sanguine*. Thus the priests, who were then nearly the sole possessors of medical, as well as other learning, left to barbers the performance of bleeding and other operations. Perhaps surgery, as it then existed, cannot be said to have been degraded by the alliance, which, however, has lasted in some parts of Europe to the present day.

The progress of anatomical knowledge has been marked by a corresponding advancement of surgery: the epochs of the two sciences are the same. Their most brilliant era in this country was that of the HUNTERS, with whom POTT was coeval. The impulse which these great men gave to medical science was not adequately sustained after their death, and the subsequent progress of anatomy and physiology must be looked for in other countries. For a quarter of a century, we were nearly deprived of intercourse with the continent, and knew very little about the state of medicine in FRANCE, ITALY, and GERMANY. The national conceit, and the mean opinion of foreigners, which this insulation engendered, were encouraged and increased by those who ought to have known better. Happily the cessation of war, by allowing renewed intercourse, has led us to a juster estimate of ourselves and our neighbours. FRANCE and GERMANY have outstripped us in their establishments for medical education, and in the opportunities of acquiring every description of professional knowledge. The advantages of free access to these sources of information, and the zealous efforts of numerous able men in rendering them as useful as possible, have attracted numerous English students to the schools of FRANCE and GERMANY, where they have seen much that might be advantageously imitated at home. These foreign travels and studies ought to meet with every encouragement, instead of exciting the mean jealousy, and the contemptible pecuniary alarm which have been shown in some quarters, where more liberal sentiments ought to have prevailed. The true lover of science will hail improvement with pleasure, from whatever quarter it may proceed. In so vast a subject as medicine, our views will be very imperfect, if they are confined to the doctrines and experience of a particular school, or even country. We should compare the opinions and practice of others with our own, and the range of comparison cannot be too wide.

The most important period in French surgery was the establishment of the SURGICAL ACADEMY in the reign of LOUIS XV. The ability and knowledge of its members may be estimated by the five volumes of its memoirs, which are replete with valuable information. JEAN LOUIS PETIT was one of its earliest members, and a distinguished ornament of his profession. DESAULT and BICHAT have successively flourished since, and claim our highest respect. The career of the latter, although short, was brilliant; he displayed such a combination of mental energy and activity, of original genius and patient industry, that his early death must be regarded as the greatest loss which medical science has sustained in modern times. His work on the membranes, his treatise on life and death, and his general anatomy, which astonish us as the productions of one who died at the age of thirty, were only the precursors of a great design which he

had conceived of remodelling the science of medicine.

The reputation of the French in medical science is still amply sustained by a long list of living individuals, whose talents and zeal are gratefully recognised by those who have benefited from their instructions. I cannot help mentioning the gratification I have derived from the admirable anatomical work of M. Jules Cloquet, the *Manuel d'Anatomie*, now in course of publication, and I strongly recommend it to your notice. All parts of medical science are indeed cultivated by our ingenious neighbours with great zeal, and an apparently disinterested love of knowledge. They excel as anatomists and physiologists; they are close observers of nature, and have investigated very attentively the changes produced in the animal organs by disease. Their knowledge is systematic and well arranged, and their elementary works excellent.

Among those who have contributed to the advancement of medicine in Germany, the name of Haller occupies the first rank. His *Elementa Physiologiæ* contains the greatest collection of anatomical and physiological facts that has yet been made; on this account, as well as for its clear arrangement, and the careful separation of fact and hypothesis, it retains, and probably will always retain, its value. Richter, who was contemporary with Haller as Professor of Surgery at Göttingen, was a close observer of disease, which he described accurately and treated very judiciously. His *Elements of Surgery*, in German, is an excellent work.

Haller published, under the title of *Bibliotheca Chirurgica*, an analysis of all the writings on surgery, from the earliest period to his own time. This work was continued in the German language, a somewhat altered form, by Richter; and it has been brought down to the present period by Langenbeck, who is now Professor of Anatomy and Surgery at Göttingen, and a most indefatigable labourer in those sciences.—These *Bibliothecæ* present a complete literary history of surgery.

Although Soemmering has not written on surgery, our respect for his consummate knowledge of anatomy, and our admiration of his unrivalled illustrations of the human structure, prevent us from passing his name unnoticed.

Italy has possessed, in modern times, three great anatomists, Caldani, Mascagni, and Scarpa. The last name of this illustrious triumvirate is equally celebrated in surgery and anatomy. In the latter science he has not been surpassed, and the estimation in which his surgical writings are held, is sufficiently evidenced by the fact of their having been translated into most of the modern languages of Europe.

The posthumous anatomical works which occupied Mascagni more than 20 years, are now in course of publication; but the principal one is at so high a price, on account of the number and beauty of the plates, that it can only meet with a very limited circulation. The design and the execution are equally grand, and far exceed all previous efforts. He has formed and executed a plan apparently far beyond the grasp of a single mind, and the extent of an individual life; viz. to represent the whole human fabric, from the microscopical details of each tissue and organ, to the view of all parts in their natural size and relations. We are lost in astonishment, at the persevering industry, the genius and the taste which are displayed throughout, and you will be still further surprised, at hearing that the author was not a member of the medical profession, and devoted himself to anatomy merely as an interesting pursuit.

They who have been accustomed to the rubbish and trash which pass under the denomination of anatomical plates in this country, should just look at the *Anatomica Universa* of Mascagni: they will get a new insight into the construction of the human body, and the manner in which it may be delineated.

I know of no good English work on general pathology; that of John Peter Frank, *De curandis Hominum morbis*, is, perhaps, the best general practical book as far as it goes. Neither have we any good book on pathological anatomy; that of Dr. Baillie is merely a catalogue of morbid appearances; and many important parts are entirely omitted. Meckel has published a more general and philosophical work in German. His *Manual of General Anatomy*, which has lately been translated into French, also contains a short account of the pathological changes observable in each structure and organ.

Many valuable contributions to the subject have been made of late years in France, where ample opportunities exist for cultivating pathological anatomy: these have been most zealously employed by many ardent inquirers.

Mr. Hunter's *Treatise on the Blood and Inflammation*, contains materials of the greatest value, for illustrating the most extensive and important department of surgical pathology; its obscurity and defective arrangement render it unfit for the student. Dr. Thomson's *Lectures on Inflammation* will be much more useful to him.

Mr. Abernethy's *Remarks on the Constitutional Origin and Treatment of Local Diseases*, and Dr. Hamilton *on Purgative Medicines*, deserve, and will repay your attentive perusal. To the writings and lectures of the former, we may ascribe the

great praise of exciting and exemplifying a more scientific investigation and treatment of surgical diseases. He was the first, in this country, to vindicate the natural rank of surgery, as a branch of general pathology; he taught us to extend our views beyond the narrow limits of local causes and remedies; he pointed out the general influences to which the diseases of parts owe their origin, and hence he deduced the general means of treating such affections. He has been accused of wishing to make surgeons physicians; the accusation does him the greatest credit. By exciting surgeons to cultivate medicine generally, by thus re-uniting two artificially separated parts of one science, which require each other's aid, he has, at the same time, benefited the public, and increased the respectability of his own profession.

The *Dictionary* of Mr. Samuel Cooper, and his *First Lines of the Practice of Surgery*, are essential books, whether for the student or the practitioner. The dictionary in particular, is, in itself, almost a complete surgical library, and its ample references will point out to you the sources of further information on all points.

In the course of our lectures we shall have occasion to mention other books. I will only observe here, that he who wishes to acquire a thorough knowledge of his profession, ought to be conversant with the Latin, French, and German languages, as numerous valuable works on all parts of medicine are to be found in each of them. Our own language is indeed very poor in elementary professional works; we have no original standard production on anatomy, physiology, or general pathology. I know no English work, even on the practice of medicine, that can be considered on a level with the present state of knowledge. The aid of foreign medical literature, is therefore essential to those who wish to study medicine thoroughly.

Let me observe, Gentlemen, in conclusion, that in devoting yourselves to the medical profession, you are undertaking an honourable and useful, but very arduous task. The most comprehensive mind, and the greatest industry, might find occupation for many years in acquiring the whole circle of medical knowledge; and you will have reason to lament that you cannot employ a longer time in the preliminary studies, which are necessary as a qualification for practice.

In some respects, our profession has peculiar advantages; it engages us in the contemplation and study of nature, and in the investigation of truth. We are not obliged to defend any doctrines or systems, nor to uphold any set of opinions. We have no interests at variance with those of the community. In professional intercourse with our fellow creatures, we are known only as the instruments of good, as the means of removing pain and sickness, the greatest evils,—and of restoring or securing health, the greatest blessing to man. The happiness or misery of life, and the very questions of life or death often hang on our decisions. I trust, that bearing in mind the serious nature of your duties, you will be anxious to employ the short period of your studies to the greatest advantage, and allow no opportunity of gaining knowledge to pass unimproved. You will thus render yourselves useful and respected members of an honourable profession, and be always able to look back with satisfaction on a life spent in doing good to those around you.

THE

INTRODUCTORY LECTURE
TO A COURSE OF ANATOMY,

DELIVERED BY

Mr. BENNETT,

AT THE

Medical School, Dean-street, Soho-square.

Gentlemen,

The usual practice, which has been so long pursued by the Teachers in this city, of prefacing their Courses of Lectures by some introductory remarks, in some measure imposes on me the necessity of following the example.

An introductory lecture partly refers to the individual who delivers it; his pretensions; his merits with regard to the past, or his promises with regard to the future: and in the next place it may refer to the subject matter of the proposed course of lectures. Persons of established reputation usually appeal to the past, and speak of what they have already done; and assuredly it must be admitted to be the most legitimate ground on which a man may rest his claims: whilst those who are only about to enter on their career, come forward with promises and professions which are not always realised.

To speak of self is at all times an irksome and disagreeable task, particularly so when an individual has to state his own case, and the grounds on which he may think himself entitled to public support; but to make promises which may not be performed, and professions which may not be realised, savours too much of that which every professional man should sedulously avoid. I feel,

however, relieved from the painful task of making any allusion to my past opportunities or present pretensions, by the circumstance of my case having been so constantly mixed up with certain late discussions, a subject which it would be superfluous to introduce on the present occasion, and one which I assure you I dare not trust my feelings upon. I therefore pass on to another, which is more congenial to my usual modes of thinking, and far more conformable to my taste and habits.

The proper object of the anatomist's study is the structure of organised beings. These, in their immense variety—their infinite diversity of form and structure—in their different degrees of development, from the lowest vegetable (through the great chain of animated existence) up to man, may be said to be included within the province of anatomy.

In its literal sense, anatomy simply means dissection; but though this may have been the original signification of the term, it now admits of a more extended application, for it includes the consideration of all animated nature, and may therefore, with propriety, be designated the science of organisation.

A pursuit so extensive, I may say so multifarious, must have been slow in its progress to improvement; for, like all the physical sciences, it required the concurrent exertions of a number of individuals, each devoting himself to the cultivation of particular departments of it. Those arts, which are the offspring of the imagination, and which, as such, rest solely on the genius of a single individual, may attain the very highest degree of excellence, even in the infancy of society. Hence it is that poetry, painting and sculpture, started into maturity in the earliest ages, and the productions in those arts, which were then given to the world, have been since seldom equalled, never excelled.

But far different is the progress of those arts which are founded on observation. Time and labour must be devoted to their cultivation, and as all that is observed must be submitted to the ordeal of the judgment before truth is elicited, improvement must be gradual, and perfection remote. Impediments such as these, which arise out of the nature of the pursuit, have no doubt materially retarded anatomy; but the industry and exertions of those engaged in its study, would have readily surmounted these obstacles, if, unhappily, anatomy more than any other pursuit, had not to struggle against the common enemies of all sciences—superstition, and the prejudices of the vulgar and the illiterate. Even in the present enlightened age, and in this country too, so celebrated for the freedom of its institutions, and the liberal spirit of its policy—in this country, where the public good is so much the object of solicitude, the impediments which ignorance and superstition had in remote ages raised to the study of anatomy, are still continued; and a subject with which the well-being of the community is so vitally connected, is fettered by obstacles of the most vexatious and revolting description. In France and other continental countries, an opposite line of conduct has been pursued. The governments have not only removed all the obstacles which impeded the study of anatomy, but have encouraged and promoted it by every means; and the effects of this policy have been rendered manifest by the great and decided progress which the science has made in those countries within the last thirty years.

Anatomy has always been regarded as the basis of the healing art; from its cultivation, the sciences of physiology and pathology have arisen to their present improved condition, and it is only through its future improvement, and the consequent advancement of those two sciences, that the practice of medicine or therapeutics can ever approach the rank of an exact science. Before the present age, medicine reposed upon such tottering bases, as the fertile imagination of man could suggest. It was therefore fluctuating and unsteady in its progress; the doctrine of one day yielded to the theory of the next, and certainty and consistency were lost in the wildness and intricacies of speculation. In the language of the immortal Bacon, "Men sought to make a world from their own conceptions, and to draw from their own minds all the materials they employed. But if, instead of doing so, they consulted experience and observation, they would have had facts, not opinions, to reason about, and might ultimately have arrived at a knowledge of the laws which govern the material world." The truth of this observation is apparent, and seems now to be fully appreciated as the only mode by which we can attain certainty in the improvement of any science. We now feel the necessity of first collecting facts, and then deducing our principles from them. It is with this view that comparative anatomy has of late years been studied with so much effect. For in our endeavours to ascertain the laws of life, it is evident that the plan most likely to be successful, is to direct our attention to the study of those organized beings whose structure presents the most simple form, and whose functions are the least complex. In them we find what I may term the rudiments of organization and life, the knowledge of which must facilitate our inquiries into the intricate and complicated machinery of man, and forward us towards the great desideratum

of medical philosophy, namely, the knowledge of the laws of life.

That the human mind, considering its limited capacity, could ever attain this object, may appear to some as visionary and impossible; but if we reflect upon the darkness which enveloped the phenomena of unorganized matter, until the genius of a Newton shed light upon them, we may, without presumption, hope that the human intellect may yet unveil the mysteries of the laws of life.

Influenced by the importance of this subject, I thought a few observations on organized bodies generally would be the most useful introduction to a course of human anatomy.

When we examine an organized body, we find it presents externally a particular form which is constant, and which is more or less rounded, or rather not angular, and internally a series of heterogeneous parts, consisting of solids and fluids. The solids are called organs, and hence the term organization. They may further be designated instruments, for it is by their action that life is sustained. Each organ has a determinate form, a proper situation in the system, and when examined is found to consist of particles which are interlaced or interwoven, forming areola like sponges, and cavities which contain the fluids. The fluids are generally termed humours; they exceed in quantity the solids, particularly in animals, and both are in a state of mutual dependence, for it is from their union and reciprocal action that organization results. Now when we come to examine chemically the solids and fluids, we find that they are analogous in their composition, and that their materials present nothing particular, inasmuch as they exist equally in unorganized bodies. Oxygen, hydrogen, carbon, and in a great number azote, with earthy substance being the elements, we may infer that it is not the constituent principles, but the arrangement of them, which distinguish organized from unorganized bodies.

The action of an organ, or of many, producing a common effect, is termed function. Now there are two functions common to all organized bodies; by the first, they possess the power during a limited time of appropriating to themselves extraneous substances, part of which become identified with them by assimilation, and further, of separating from their systems, substances which then become foreign. During this process the component parts of the organized being are continually changing, but its form remains the same. Extraneous substances can penetrate an organized body in the fluid form only, and it is in the same form that the superfluous molecules are disengaged or separated. As a necessary consequence of this action, the solids and fluids are in continual movement in the system, the fluids running through the cavities of the solids, and the latter, by their dilatation and subsequent collapse, determining in a great measure the motion of the former. During these changes, part of the fluids become solid, so occupying the place of others which are taken up in order to be eliminated from the system.

Now as the existence of an organized body is limited, we find that the vital movement, after a certain period, becomes languid, and eventually stops altogether. This is death; after which the elements of the organized body separate from each other, and enter into new combinations, so that not a vestige of the former being remains, with the exception of (in animals) that small portion of earthy substance which enters into their composition.

The second great function common to organized bodies, is that which provides for the continuation of the species, namely, generation. All organized bodies are produced by others, similar to themselves. In the first moments of existence they present the form of a germ, appearing either in or upon the parent, from which they separate after a certain time, and become independent and distinct individuals.

Such are the common characters of organized bodies, and such the common functions which constitute life in them; indeed, life and organization seem to be in such mutual dependance, that each seems to be a condition of the other, for without organization life cannot be supposed, and without life organization cannot exist. I do not, however, imply that life is the result of organization; such an opinion has neither reason nor observation to support it, and seems to have originated in the abuse of words.

An obvious division of organized beings at once occurs, into the vegetable and animal kingdoms; the vegetables we leave to the botanist, and confine our attention to the animal kingdom, as being more immediately connected with the province of human anatomy. I may here, however, briefly observe, that it is rather difficult to assign the precise line of demarcation between the two kingdoms, for the lower grades of animals resemble some of the vegetables so strikingly, both in structure and function, that it is almost impossible to refer to their proper kingdom several of the individuals that are found on the confines of each, the vital actions in both being limited to simple nutrition, by which life is sustained, and the power of reproduction, by which the species is continued. It may further be necessary to state, that the functions of motility and sensibility are said to exist exclusively in animals.

Passing on, therefore, to the consideration of the animal kingdom, we find, that in addition to the rounded form which characterises all organized bodies, animals are externally symmetrical, that is, they present two equal and similar portions, one on each side of the central line.

The body is hollowed into an internal cavity or intestine, lined by a membrane continuous with that which envelops the external surface; into this cavity the aliments are received. In the greater number of animals there are vessels termed circulatory, which carry the nutritive substance to the different parts of the body; respiratory organs, in which this matter is submitted to the action of the atmosphere; and further, secretory organs, where a part of this matter is separated from the general mass, to be conveyed away from the system. They also possess genital organs, in which the germs of the young make their appearance, and from which, after a certain period, they detach and separate themselves. In most animals also, there are muscles to execute movements, senses to receive impressions from external objects, and a nervous system consisting of chords and filaments, expanded at one extremity in the several organs and teguments; and by the other extremity, attaching themselves to the nervous centres, to which they convey impressions made on the several organs, and from which they reconvey the mandates of the will.

The solid parts, or the organs of animals, have for their base cellular tissue; this, in a state of condensation, forms the envelope or skin externally, and internally, the lining or mucous membrane; and this mucous tissue prolonged into the several organs of respiration, secretion, and generation, constitutes the direct medium through which these several functions are performed.

Hollowed into canals, the cellular tissue forms the several vessels, and they, by their infinite congeries, produce other organs, as the glands. The muscular fibre is another kind of solid, different from the cellular tissue; microscopic observation, shows it to consist of small globules ranged in lines, and its leading character is irritability, that is, when stimulated, it is thrown into a state of contraction.

The substance of nerves is also formed of globules, but different from those which form the muscular fibre.

The humours are abundant in animals, and exceed, in their proportion, considerably the solids. This has been made the subject of direct experiment. A human body being weighed immedintely after death, and then subjected to destructive distillation, so as completely to expel all its fluids, it was found that the proportion of fluids to solids was as nine to one.

In the greater number of animals, there is a fluid constantly circulating; it is the blood, which may be called the central mass of the nutritive fluid. It flows in a circle, depositing, in the several parts of its course, materials for growth and nutrition, and receiving from without matter for its own constant renewal. When examined, we find it to be a serous vehicle in which globules float; its composition differs not from that of the solids, whereby we are enabled to understand how the fluids are convertible into solids, by an easy and natural transition. Indeed the anatomical elements of the solids and fluids appear to be the same; liquid in the blood, where they constitute serum or albumen; globular, in the red particles, which float in that serum; globular also in the nervous matter, and in the muscles, where the globules are disposed in lines or fibrillæ; and, finally, concrete in the cellular tissue.

When we come to consider the functions of animals, we perceive that those of nutrition and generation, which they have in common with vegetables, are more or less modified. Nutrition, instead of resulting from an external absorption, as in vegetables, is performed by an internal absorption; and the nutritive fluid taken up from the cavity of the intestine, instead of being directly assimilated with the system, is first submitted to the action of the atmosphere. During this process, water and carbonic acid are produced, and expelled from the system; but, in vegetables, on the contrary, the hydrogen and carbon are retained, and the oxygen is exhaled. Further, the nutritive fluid is constantly purged or depurated by another action which is termed secretion. This process takes place on the external surface or skin, on the internal or lining membrane, and, finally, in certain organs in which the circulating vessels communicate with proper excretory canals.

Of the several fluids thus separated from the blood, some are made subservient to certain uses, as the bile, the pancreatic and salivary fluids, while others are rejected altogether from the system, as the urine. The circulating fluid thus constantly renewed by intestinal absorption, and preserved in a proper state by respiration and secretion, passes to every part of the body, where a portion of it becomes solid; and, again, part of the solids become fluids, and re-enter the circulating mass.

The next great function, generation, presents such extreme diversity in the several modes in which it is carried on, and offers so little of peculiarity which may be considered proper to animals, and yet common to them all, that it would be extremely diffi-

cult to state any general views which would not be equally applicable to the vegetable kingdom. Hence we must defer the subject to the examination of the several classes of animals.

Motility, sensibility, and the action of the nervous system, give animals a series of functions which are called animal, in contradistinction to those which they possess in common with vegetables, which are termed vegetative or organic. Motility, or the power of motion, resides in the muscular fibre. The muscles are composed of bundles or fasciculi of fibres, and are fixed by their extremities to those moveable parts which they are destined to act upon. When in action they contract, whereby their extremities approach.

Sensibility, or the faculty of receiving impressions, has, for its organ, the nervous or medullary substance. This, disposed in filaments, constitutes the nerves, which are white chords connected by one extremity to what are called nervous centres, namely, the brain, spinal marrow, or ganglia; and, by the other extremity, they are expanded in various organs. Impressions produced on the system, by external agents, are transmitted by the nerves to the central mass; and, again, when an animal receives a sensation, which calls forth a volition, it is by the nerves that the will is transmitted to the muscles. The central nervous mass is further the organ of instinct, and of the cerebral functions.

We have now seen the general properties which characterise animals, and the functions which are common to all. But these, you may perceive, are few, and would limit our knowledge within very narrow bounds, did we not consider the different degrees of energy, and other peculiarities which distinguish some animals from others, in the performance of their functions. In order, therefore, to facilitate our inquiries, the animal kingdom has been divided into classes, and as it was impossible to find any one function or organ, with the development of which the other functions and organs kept pace, whereby the rank of each individual could be determined, it has been deemed necessary to group them according to the ensemble or aggregate of their functions. As motility is a leading character of animals, the first great division of them is determined by the nature and position of the organs destined for that function. In reference to it, animals have been separated into the two great divisions of the articulated and the non-articulated. The articulated are again divided into those which are articulated internally, and those which are articulated externally. In the first the bones are placed on the inside, where they form a skeleton or frame, and the muscles are situated externally, and envelop them. This class of animals is also designated the vertebrated, as having a vertebral column.

The animals articulated externally, are those where the hard parts (which in such cases are shells or scales, instead of bones) are placed externally, thus forming envelopes for the body within which the muscles are placed.

[This part of the Lecture was illustrated by a sketch of the different classes.]

ANIMALS
- Articulated
  - internally vertebrated
    - Viviparous; with mammæ - - - - 1. Mammiferæ.
    - oviparous, without mammæ — lungs
      - feathers; wings - 2. Birds.
      - none - - none - - 3. Reptiles.
    - no lungs: branchiæ - - 4. Fishes.
  - externally, inverte-brated
    - articulated limbs
      - tracheæ - - - 5. Insects.
      - branchiæ - - - 6. Crustaceæ.
    - no articulated limbs - - - - - - - 7. Worms.
- Non-articulated - - - respiratory organs -
  - distinct; vessels - 8. Molluscæ.
  - none; none - - 9. Polypi.

We find the lowest class of animals, those whose organisation is the most simple, and whose functions are limited to mere nutrition and reproduction, to be the zoophytes. If life be scarcely appreciable in them, they possess the extraordinary power of retaining it with extreme tenacity; for although dried, they have the faculty of vivifying on exposure to heat and moisture. Their natural situation is in liquids, where they are surrounded by their aliments, which are imbibed or absorbed by external pores; when examined anatomically, their parts appear distributed about a centre, and in rays. There are no nerves discernible, nor do they possess any of the organs of sense, except that of passive touch. We do not always find a true alimentary tube in them, but generally a simple sac, with one or more openings for the admission and exit of their food and its debris. They possess no distinct circulatory or respiratory organs, and their powers of motility are generally limited to that movement which is performed by the totality of the body suspended in a fluid. Thus you perceive their functions

surpass but little those of vegetables, and therefore they constitute the lowest order of animals.

The grade immediately above the zoophytes is the molluscæ. The greater number of these animals also live in a liquid medium, in which their motility is extremely limited. Their bodies are soft and non-symmetrical, and are generally protected by shells more or less solid. They possess scarcely any of the organs of the senses, though endowed with nerves, and these latter present the peculiarity of having few or no ganglia. They have blood vessels, and consequently a circulation; also organs of respiration, which vary according to the medium in which they live. In their mode of reproduction, we find considerable variety: in some, each individual is of a distinct sex; in others, the sexes are united in the same individual, so as to constitute them hermaphrodite. Of the latter, some impregnate themselves, and others copulate, in which case each individual impregnates and is impregnated.

The next class of animals is not much more perfect than the last; they are the articulated worms, which are also destined to live in water or in humid air. Their bodies have no limbs, but present a series of rings, by which they are enabled to move. They are almost all deprived of the organs of the senses. Their medullary system consists of nerves and ganglia, from which the nerves run in a radiated direction. Their organs of generation are distinct and separate.

The next class comprises the crustaceæ. Their bodies, as in the last class, are formed of distinct pieces, one articulated with the other; but, in addition, they for the most part have limbs, or lateral appendices, which are intended for the more perfect movement of the animal. Those which inhabit water have respiratory organs, consisting of leaflets, or laminated fimbriæ, called gills, which may be termed aquatic lungs.

The next class is composed of the insects. Their bodies present a central plate, with moveable pieces; they possess the power of motion in the highest degree; some in water, some on its surface, some in the earth, and some in the air, by the several organs appropriated to these different kinds of locomotion. They respire air, which penetrates the various parts of the body by numerous openings or foramina, which lead to tubes, termed trachea. Although generally supposed to be destitute of the organs of circulation, they are more animated than the former classes, for they possess the organs of sight, hearing, smell, taste, and touch. In reference to their organs of nutrition and generation, we find insects as perfectas the classes immediately above them.

The remaining four classes of animals are included in one great division, and are called the vertebrated animals; they seem to be constructed upon the same model, for all present a vertebral column, or spine, consisting of a series of small bones, articulated one with the other, which supports the body, and further affords a canal for the protection of the common nervous mass, the spinal marrow. The vertebral column is always situated in the middle line, and in the longitudinal direction of the body; it terminates before or above in a bony cavity, which contains the great cerebral mass and the greater part of the organs of sense, and behind, in a prolongation, the tail, which is of varied use, being in some animals destined for progression, and in others for the direction of their movements. Connected with the spine, before we have the thorax, and behind the pelvis, each appropriated to the reception of organs, which are protected by the bony walls that surround these respective cavities.

To the thorax in front the anterior limbs are attached, hence termed thoracic; and to the pelvis behind, the posterior, termed pelvic, or abdominal. The organs subservient to the several functions are more numerous, and better developed than in the preceding classes. As accessary to the function of nutrition, all the vertebrated animals possess a liver, a spleen, kidneys, and, for the purposes of generation, testicles; all present organs of circulation and respiration, and all have red blood put in motion by an agent of impulsion, the heart. In this great division we have the fishes, reptiles, birds, and the mammiferæ. The fishes are the most simple and the least complicated of the vertebrated animals in their organisation. Their organs of movement, however, are highly developed, the bones and muscles occasionally forming, in weight or volume, nine-tenths of the entire body. The general structure seems adapted to the region in which they live, and thus the spine terminates behind, in a tail which performs the office of a guide, or rudder, to their movements. Their only mode of respiration is by gills, and their heart is composed of a single ventricle and auricle, the blood being made to pass through the gills before its distribution to the other parts of the body. In reference to their organs of sense, we find that they have no lids to their eyes; the ear has no external opening; the nares do not communicate with the cavity of the mouth, and are not at all subservient to the act of respiration. The females, generally, deposit their ova without any connexion with the male, who afterwards pours his seminal fluid upon them; in some, however, which are ovaviviparous, the ova are impregnated in the body of the female.

In the next class, the reptiles, we find the organs of movement to present considerable varieties; some possess no limbs, others have claws before, others before and behind, and these are occasionally used for progression on land; in other instances, as fins, for movement in water. They respire air as the classes above them, but as the totality of the blood is not forced into contact with the air, their temperature changes to that of the medium in which they are placed. Their respiration is as varied, for they can suspend or accelerate it, and thus can live under water or in vitiated air. Some are remarkable for undergoing certain changes, not only in their external configuration, but even in their organisation, a curious instance of which is seen in the metamorphosis of the tadpole into the frog. Their mode of fecundation is determined by the nature of the medium in which their young are developed.

The next class comprises the birds. These present a high degree of organisation, and their skeleton is much more solid and more complicated than that of the preceding classes. The region of the neck, and the thoracic members destined for the action of flying, as also the sternum, into which the muscles of the arms are inserted, are remarkably developed. The skin is covered by feathers, which not only protect the body, but facilitate their movement through the air. The entire of the blood passes through the lungs, to which it is sent by one ventricle, whilst the other ventricle forwards it through the rest of the body; their temperature is therefore constantly the same, be the media in which they exist more or less cold or warm. They are oviparous, producing eggs covered with a calcareous shell, and a certain degree of heat acting upon these, the young are developed by a process termed incubation.

The next, and highest class of animals, the mammiferæ, derive their name from the mammæ, which are organs destined in the female to furnish the fluid, called milk, for the nourishment of the young. Another prominent character of them is, that they are viviparous, the young being developed in a particular organ of the female, the uterus, where they are attached to an interlacement of vessels, termed placenta, from which they derive support. Their skeleton is very complete, and disposed, together with the muscles, to perform different movements, according as the animals live in air or in water. Their lungs and heart are contained in a particular cavity, which is separated from the abdomen by a muscular partition, the diaphragm. In other respects the organisation of the heart, the actions of respiration and circulation, are analogous to those of birds.

Such are the nine classes of animals, established according to the general result of their organisation; but if we were to consider their functions particularly, the classification would be attended with extreme difficulty; thus, as regards motility, the insects are superior to the molusca, and, in reference to the circulation, the molusca, are more perfect than the insects. In the higher classes of animals, we find that those organs and functions which they possess exclusively, and which, therefore, distinguish them from the lower animals, are not merely superadded to those which they have in common with the latter, but, on the contrary, that they modify them to a considerable degree, and hold them in a sort of dependence. Thus, in those animals which possess muscles, we perceive that tissue superadded to the digestive tube for the propulsion of the aliments; further muscular fibre enters into the composition of the heart, by the action of which the circulation is carried on; and again, in the higher classes, where we have a more perfect development of the nervous system, we find that it influences, to a great degree, the function of the circulation, and *vice versa*, the action of the heart, the nervous system. So that in the higher classes there seems to exist a reciprocity of action between the several functions.

Taking a rapid view of the various functions, we at once recognise the several gradations in their action, from the most simple to the most complex; they have been distinguished into the nutritive, which comprises digestion, circulation, respiration, and the secretion; secondly, the faculty of reproduction or generation; and, finally, motility and sensibility.

The most simple form of digestion is that where it seems to be a simple absorption of liquids from without, by numerous pores analagous to those of the roots of plants, as in the rhizostoma, a species of the medusa amongst the zoophytes. The next most simple is where there is a digestive tube, but it has only one orifice which admits the food, and through which the debris are rejected, such as is found in the actiniæ. The most general is, where there is a tube which admits the food at one extremity, and rejects the residue of the matter, which has been digested at the other. The mouth for the reception of aliments is armed with teeth of variable forms, as in the mammiferæ, reptiles, and fishes. It is formed into a horny beak, as in birds, tortoises, tadpoles, and cuttle fish; and all these varieties are determined by the nature of their food, some being carnivorous, others being herbivorous, &c. The digestive tube is dilated to form the stomach and other pouches of various names; often it is simple, or without any dilatation in its whole

length. As appendages to the digestive organs, we have, in the higher animals, certain fluids secreted by particular organs, as the saliva, bile, pancreatic juice. Finally, there are animals which offer curious instances of differences in the nature of their food at the several epochs of their lives. Thus the hydrophili, amongst the insects, are carnivorous in the state of larvæ, and afterwards, on their full development, become herbivorous. The tadpoles, also, which are herbivorous, become, in the state of frog, carnivorous.

With regard to the circulation, we find, that there are no organs for that function in the zoophytes and insects, though in the latter there is a long vessel extending the whole length of the dorsum of the animal, containing a white fluid, but we cannot positively say that it is circulatory, though some assert it, and hence we are led to suppose, that nutrition is carried on in them by simple imbibition. In the worms, the crustaceæ, and the fishes, the circulation is simple, that is, the heart propels the blood in a single circle. In the fishes, the heart sends the blood to the gills, from which it passes to the other parts, and then back to the heart; this heart is termed pulmonary. In the worms and crustaceæ, the heart sends the blood through the aorta to the several parts of the system, whence it passes to the lungs, and from them to the heart; this heart is termed aortic. In the reptiles and molluscæ, the circulation is termed partial; the heart sends, at the same stroke, the blood to the lungs, and to the other parts of the body; hence only part of the blood has the benefit of respiration. In the mammifer and birds, the circulation is double; the heart, which is single in the preceding classes, is double in them. One side propels the blood to the lungs, and the other to the entire system.

Respiration is carried on externally, or on the external surface in the zoophytes, the same as in vegetables. It is performed by the gills in fishes, the crustaceæ, and the molluscæ, by tracheæ, or tubes, which carry the air to all parts of the body in insects; finally, it is performed by lungs more or less complicated in the reptiles, birds, and mammifer.

The manner in which the secretion is performed, is too little understood in the lower animals to admit of any general description.

With regard to the reproduction or generation, we find an extraordinary variety in the operation. In some animals, as the intestinal worms, we are as yet ignorant of the mode in which they are generated. In others, as the polypi amongst the zoophytes, there are no organs for the function; reproduction in them resembles what is artificially resorted to in the propagation of some plants. You are aware, that a slip cut from a plant, and placed in the earth, under favourable circumstances, can become an independent individual. In the polypi, the branches or arms separate spontaneously from the parent polypus, and thus the animals are multiplied. The greater part of animals have particular organs for reproduction; these are divided into the male and female. In some, as the molluscæ, both organs are found in the same individual, and each impregnates itself; but in one class of the molluscæ, the gasteropodes of Cuvier, though hermaphrodite, yet it is necessary that there should be accouplement of two individuals, in which case each impregnates the other, and is itself impregnated.

A great number of animals separate from their systems the germs of their young in the form of eggs; they are hence called oviparous. In some of this class, as birds, the greater part of reptiles, the crustaceæ, almost all the insects, the molluscæ, and worms, the ova are fecundated by the seminal fluid of the male in the body of the female, before the egg is evolved, and the development of the fœtus takes place externally. In others, as fishes and the batrachian tribes, the ova are first deposited by the female, and the fecundation takes place externally. In the higher classes, the germ is not only fecundated in the system of the female, but the development of the young is also carried on there. These classes are thence termed viviparous.

We have already seen, that in reference to their powers of motility, animals are divisible into a series of classes. Their powers of motion are necessarily determined by the nature and development of the organs subservient to that function. In most classes, they are made accessory to the seizing and retaining their prey, and to self defence. In man, and the higher animals, those variously diversified phenomena are produced, which, though dependant on one cause, namely muscular motion, have received different denominations according to the circumstances under which they are performed. Thus the action of the muscles of the face is termed gesture; that of the body posture or attitude; that of the heart and arteries, pulse; of the intestines, peristaltic or vermicular motion; and to the several movements of the body, the terms are applied of walking, running, climbing, swimming, &c.

The organs of sensibility are always in relation with the powers of motility, and developed in the same ratio as the animal is animated.

Finally, the organs of the senses differ in their number, and in their degree of energy. All the vertebrated animals have the same

senses as man. In the invertebrated animals, the sight is wanting in the zoophytes; several of the articulated worms in many of the larvæ of insects, and in some of the molluscæ.

The organ of hearing is not found in several of the molluscæ, and numerous insects. The remaining senses, particularly the taste and touch, are never wanting. In fact, could we enter into details, we should find that the organs of sense are modified according to the medium in which an animal is destined to live.

Such is a rapid and cursory sketch of the animal creation. Man is necessarily placed at the head of the great scale, and in him we find a series of characters by which he is distinguished from those animals which approach nearest to him in their structure and functions. The most evident is, that man by Nature has been intended to walk erect. But the great characteristic of the human organization is founded on the proportion between the cranium and the face, in which the former considerably exceeds the latter. This is owing to the predominance of the brain contained in the cranium over the organs of the senses contained in the face, but more particularly the organs of mastication; for the prolongation of the jaws forward, seems to be attended with a retrocession of the skull backwards, and on the proportions resulting from this comparison, depends the facial line of Camper. Thus it is the nervous system which distinguishes man particularly. The human brain has been said to be greater than that of any other animal, proportionally to the size and weight of the body; but the conclusion is not perfectly just, for in some animals, as the mouse, the contrary is the fact. If, however, we compare the brain with the spinal marrow and nerves, we shall find that in man the former considerably exceeds the latter in their relative proportions, while in animals the converse is the fact. Thus in man the brain is relatively great, and the spinal marrow and nerves small; whereas in animals the brain is by no means developed in proportion to the great size of the spinal marrow and nerves. In man also, the spinal marrow is thinner and shorter than in animals, at the same time that in him it occupies but the upper part of the vertebral canal, whilst in animals it descends and fills the whole cavity. In fine, the peculiarities of the human nervous centre may be comprised in the following characters, namely, the great development of the cerebrum and cerebellum relatively to the spinal marrow, to the tubercula quadrigemina, and the olfactory lobes, which are merely rudimentary in man—the great size of the lateral lobes of the cerebellum relatively to the middle lobe—the volume of the hemispheres—their prolongation backwards—the existence of the posterior lobe and its appendages—the thickness of the nervous membrane which forms the hemispheres—the extent of the central medullary mass—the number and depth of the sulci—the number and thickness of its convolutions, by which its surface is increased—and finally, the size of the corpus callosum. It would be impossible to enter upon a detail of the numerous peculiarities of the other organs in man. The position of the occipital foramen, that of the teeth—the absence of the intermaxillary bone—the oblique position of the heart—the connexion of the pericardium to the diaphragm—the softness of the mucous tissue in the intestinal canal—the cæcal appendix—the want of communication between the cavities of the peritoneum and tunica vaginalis, constitute so many other distinctive characters, which it would be too tedious to enumerate on this occasion.

These mere physical characters strongly mark the line of demarcation which separates the human species from all other created beings. There are others, and of a higher order, which not only distinguish him from them, but make that distinction an essental one. Man is further an Intelligence, and the peculiar characteristics of his intellectual nature are Conscience, Reason, Free-will, Moral Feeling, and the Sense of a Divine Cause; he is endowed with the faculty of communicating his wants, his wishes, and his feelings; he can look back and contemplate the past, and forward and calculate upon the future; and then it is he feels as if instinct told him, that he is intended for a future and a higher destiny.

It has been objected to the study of anatomy, that it has a tendency to disturb the belief of a Divine Cause; but the anatomist, when he surveys and studies the wide domain of animated nature, and contemplates the vast scheme of existence, every stage of which is marked by order and regularity, by a perfect adaptation of means to end, of structure to appropriate function, must recognise and perceive design in every step of it, and feel an irresistible appeal to his senses, which forces him to admit a superior and superintending Cause. But some there are who take a different view of this important subject, who would fain bring down all things to the level of their own contracted intellects, who would make their own minds the metre of an universe, who cannot estimate the design which pervades this great system, or the harmony which reigns through its different parts. Thus it is, that a fly on the pillar of a temple, sees the little inequalities of the surface on which it rests, but is unable to take a comprehensive view of the whole edifice, survey its beauties, its symmetry, and its proportions, and form an

adequate idea of the genius and power of the artist who designed, planned, and executed it.

To the medical man, the study of anatomy is one of the most important that can engage his attention, no matter what department of the healing heart he may ultimately pursue as his profession in life. The structure and functions of the body in health must be carefully studied before we can be competent to appreciate its various and complicated derangements in disease: "Pour connaitre homme malade, il faut connaitre homme sain." The study of anatomy must be made subservient to the one and the other; when thus considered, we shall find that it makes us acquainted with the characters and properties of those textures or tissues of which the human body is composed, and then demonstrates the different changes which disease induces in them. The knowledge of the alterations produced by disease in the texture of organs, is of the first importance to the physician, particularly as it forms the basis of pathology. Every anatomist, during the prosecution of his studies, has abundant opportunities of observing these changes of structure; for his researches are conducted on the bodies of those who have died of disease, and he very seldom indeed has an opportunity of examining a body that does not present some morbid alteration. Hence, even in the dissecting room, a studious observer can prosecute anatomy, not merely in its detailed description in reference to medicine and surgery, but also as subservient to pathology and diagnosis. In the Course of Lectures which I am now about to enter upon, it shall be my constant aim to awaken the attention of the student to the importance of these pursuits. A practice has obtained, I know not on what grounds, of giving what is termed a general lecture at the commencement of the anatomical description of the different systems of organs; thus, before the bones are described, it is usual to explain the general principles of osteology, as well as the structure, uses, and even diseases of the osseous system. I shall not adopt this arrangement, as it is scarcely possible for a student to comprehend the general principles of a science, before he is acquainted with its details. The most proper course to be pursued, evidently, is to state the facts first, and then the general conclusions which follow them. I shall then enter at once on the description of the osseous system, and after I have completed it, I shall give the general anatomy of bone, which includes a consideration of its structure, uses, and diseases; I shall adopt this same course when treating of the other systems, namely, the muscles, arteries, veins, nerves, &c.

In reference to surgery, and the performance of operations, the different systems of organs shall be examined with the most scrupulous accuracy; parts shall be studied as they are found; their position indicated, and relative situation pointed out, that the student may have clear and precise ideas on each of these important particulars. It is by no means sufficient for practical purposes to be able to trace the courses, or indicate the minute ramifications. Though a person may have acquired even a minute knowledge of such details, he yet cannot be said to have studied anatomy with effect, unless he has learned to combine different parts as they exist together in nature, and group them according to their relations of place, size, and other circumstances.

I have now, Gentlemen, to conclude by assuring you, that I partake but of the common spirit by which every teacher in this school is actuated, when I state that our best efforts will be directed, not only to the improvement of those who commit their education to our charge, but to the advancement of the science generally.

To the Editor of THE LANCET.

SIR,—I perceive, in this day's Lancet, you have transcribed an error respecting me, in citing a paragraph from Mr. Lawrence's work, which I trust you will have the goodness to correct in your next Number. The passage I allude to runs thus; "Mr. Sleigh commenced teaching but FOUR MONTHS prior to the promulgation of the by-law;" whereas I was lecturing FOUR YEARS before that regulation was made. True, not exactly in this country; but being placed in connexion with Mr. Bennett's saying, "he spent three years in Paris lecturing," an erroneous inference would naturally be drawn. Mr. Lawrence was told of this error ere his work was finished, but, for what reasons I cannot tell, he did not think proper to correct it.

I am, Sir,

Your very obedient servant,

W. W. SLEIGH.

23, Chapel Sreet,
Grosvenor Square, Sept. 30.

THE LANCET.

London, Saturday, October 7, 1826.

The Edinburgh Journal of Medical Science.

No. IV, for October, 1826. 8vo. p. 496.

This work bids fair to eclipse the *luminary* of the junior Duncan. We have often wondered, indeed, that a poor thing like the purple journal, should be allowed to lord it alone in such a place as Edinburgh, where, surely, there are men capable of conducting a work of this kind, in a manner at once creditable to themselves, and useful to the public. Whether the sloth of senility have seized the younger Duncan's squad, or death deprived him of his most efficient supporters, we do not pretend to determine; but, certainly, there has been a woful falling off, of late, in the conduct of our northern contemporary. Spiritless, sneaking, and supple, that the person at the helm of affairs would appear, it is no wonder that practitioners of eminence have ceased to communicate with him. There are casualties, it is true, incident to every journal, which hopes to be supported by "original communications," as our friend Copland can testify; but he who undertakes to conduct the work, should be prepared to indemnify the subscribers for any falling off on that score, by some little attention to what is passing around him, or may appear in other periodicals. In this, also, the purple journal has been very remiss; not to mention the common place and superfluous cases which have too often served to eke out its pages. "The publication of cases of little importance," says the erudite Copland, the *præfectus mausolēi*, than whom no poor devil labours harder in his vocation, "offers temptations to young and inexperienced men, which the vain, the ambitious, and the impatient, can seldom resist." And as long as these propensities are indulged, and men of talent and experience find their communications mingled with such a hodge-podge of crudities, they will never endeavour to sustain the reputation of a journal, if they communicate at all. Men who are estimable, perhaps, in every thing else, are often caught tripping, when narrating their own deeds. No man will, knowingly, publish facts that may operate to his prejudice, but will lean to the indulgent side, to the selfish idol, with whom most persons, who constantly contribute to periodicals, are usually on the best possible terms. It is perfectly natural, that what is incongruous should disappear, and that a beautiful harmony of thought and conduct should pervade the lives of those who become their own biographers; and it is perfectly natural, and a great satisfaction to all *honest* men, that the gullibility of the public should bear an exact ratio to its ignorance; that he who is the stouter swearer, should have the greater credence. Had not the College Examiners told us of their desire "to promote sound chirurgical knowledge," we might not have dreamed that such was the object of their celebrated by-laws; but since they did so asseverate, we are bound to believe them; so also, with Dr. James Johnson, we are bound to believe, that the Hospital Reports of the aforesaid gentry are ushered into notice, *puris naturalibus*, because, forsooth, they are "authenticated" by their respective authors!—genuine by the same talismanic art which made their own emolument, and the promotion of sound chirurgical knowledge, between which there had always existed the most mortal antipathy, to accord with more than homogeneous fondness, to adhere so tightly, that it were like riving the knotted oak to separate them. God keep us from all such "authenticated statements." Cullen, who saw as much as most men of his day, complained that cases were "often too hastily made, perhaps very entirely dressed in the closet." What think ye then,

" my masters," we have witnessed during our acquaintance with hospitals in this juggling age of editoral courtesy, so rife and prolific of mountebanks? Verily we have " confirmation strong as holy writ," of the northern professor's remark. Let it not be said, however, that we are too sweeping in our censures. We are ready to admit, that men may still be found who have the honesty to think for themselves, and who abound as much with all that ornaments and exalts the human character as ever enlisted in the cause of physic. Such men shall always have our esteem and regard, and be protected against the machinations and dark plots, by which others are seeking to exalt themselves, but by which, while there is a vigilant press, they will only find " dishonourable graves." We perceive that the " Edinburgh Journal of Medical Science," has endeavoured to steer clear of the petty bickerings and jealousies which have long disgraced its aged contemporary, and that it is supported by some of the most eminent names in the northern metropolis.—We wish it every success,—so long as it shall do its duty.

We have only room, at present, for the following letter of Mr. Allan, which is a kind of appendix to a paper by Dr. Munro, " on Spasm of the canals for the passages of the Food, the Bile, and the Urine," inserted in the last Number of the Journal, which we shall lay before our readers when opportuity shall offer, as well as any thing else that may appear to merit further publicity, in this and other publications. The letter is addressed to Dr. Munro, and although we rather think the circumstances which the writer has described very rarely occur, we deem it worthy of notice, as indeed any thing that may now and then tend to perplex the lithotomist cannot fail of being. It is as follows:

57, York Place, June 20, 1826.

" Dear Sir,—You will, no doubt, recollect of having been present, ten years ago, at an operation of lithotomy, performed by a young surgeon, on which occasion I acted as his principal assistant. The bladder was soon cut in to, and a stone of some magnitude readily extracted; but we were conscious of the presence of another stone, although the operator, after the repeated introduction of the forceps, failed to extract it. The difficulty of extraction arose from the bladder spasmodically contracting upon the stone, and thus preventing the forceps from coming into contact with it. I introduced my finger into the wound, and felt a stone above the pubis, which was firmly held in this situation by the spasmodic contraction of the bladder. I could just reach the stone, and turn it round and round, but my finger was too short to dislodge it. As the operator was not provided with a lever, or with curved forceps, I advised that the patient should not be kept longer upon the table, but that he should be put to bed, and that as the opening was free, when the spasm of the bladder was relaxed, and suppuration established, there was little doubt but that the stone would be easily extracted; whereas, by persisting in fruitless attempts to extract, the patient would be so much exhausted, that his danger would be thereby greatly increased. The patient was therefore laid in bed, and when I went to visit him, along with his surgeon, on the evening of the third day, I introduced my finger into the wound, and hooked out, with the utmost ease, a stone about the size of a turkey-bean, which was lying in the inner opening. The patient recovered without one bad symptom, and this operation I have frequently revolved in my mind, and kept the case in view, as a guide in similar circumstances.

In a conversation which I lately had with you, respecting the spasmodic action of the bladder, you observed, that you thought this untoward circumstance might be, in a great measure, or altogether prevented, by exhibiting a tobacco clyster, or giving a large dose of opium, a short time before the operation, and you suggested the propriety of this practice. My objections to the tobacco clyster are, that we can never exactly know the extent of its influence on the system; a quantity which, in one person, will produce little effect, will, in another, depress the powers of life to a dangerous degree; and, as far as my experience goes, patients with strangulated hernia, who have received the tobacco clyster, previous to being subjected to an operation, never recover so well as those to whom it has not been administered. I should therefore give the preference to the opium.

On the 31st of last month, a boy, three years and a half old, presented himself with stone in the bladder From the irritability

of system incident to this period of life, from the rectum being prolapsed immediately on the sound being introduced into the bladder, and from the obstruction which I experienced in passing the instrument through its neck, when this viscus was empty, I was prepared for some difficulty in the extraction, and therefore judged it to be a proper case for the trial of the opium. I ordered the patient to be placed upon a milk and vegetable diet, to be immersed in the warm bath at bed-time, for several nights in succession, to have five minims of laudanum each night, and his bowels to be kept freely open by laxatives. The rectum was washed out with tepid water, on the morning of the operation, and two hours before cutting, he had a draught containing fifteen minims of laudanum.

On the 6th of June, I performed the lateral operation with the knife; and, on passing my finger into the bladder, readily felt a stone, but I had no sooner introduced the forcepts than it disappeared. This repeatedly occurred; and it is worthy of remark, that if I withdrew my finger for a minute, on again introducing it I readily felt the stone; but when I moved my finger freely within the cavity of the bladder, it was as effectual in exciting spasmodic action as when the forceps was introduced. I changed the posture of the patient, and injected some tepid water, but with no advantage. I now ceased to introduce any metallic instrument, and after the bladder had remained for a little while quiescent, again introduced my finger slowly into the wound, when I felt the stone above the pubis held in the contracted folds of the bladder. On attempting to hook the stone, it fell down to the lower and anterior part of the bladder. I then put my finger upon it, passed along the finger a small lever, which I had got made for the occasion two days before the operation, and, with the assistance of another finger in the rectum, easily turned out a rough stone, the size of a French olive.

It is just a fortnight to-day since the operation; for the last few days all the urine has been passed by the urethra, and the wound is completely cicatrized. During last night the boy made water only twice; he is now running about, and is, every respect, well.

Quære.—When the incisions are free, and the delivery of the stone prevented by the spasmodic contraction of the bladder, as this will not relax till the patient is exhausted, and brought into danger, is it not the preferable practice to put the patient to bed, instead of employing force, or persisting in fruitless attempts at extraction? "S'il est de l'honneur du chirurgien (says Le Dran), d'oter la pierre, son honneur est encore plus attaché à la guerison du malade Que pourroit on penser, d'un lithotomiste, qui ne manqueroit jamais d'oter la pierre, mais dont tous les malades periroient par l'inflammation, dans les premiers jours de l'operation?

I am, dear Sir,
Yours, most faithfully,
ROBERT ALLAN."

THE WEST END HOSPITALS.

THE West-end hospitals begin at length to show some symptoms of reform. The tardy manner in which this has been brought about, evinces the reluctance of the Hole and Corner gentry of the West to yield to the dictates of common sense, and if they knew it, of their own interests. The force of public opinion has been long bearing on the shoulders of these stiff-necked people; they have felt its weight, a weight weekly increasing; and after writhing under it for more than two years, they find themselves no longer able to withstand the accumulated pressure, and begin to cry *peccavimus*. We verily believe that the Hole and Corner gentry of the West, did for a long series of years console themselves with the illusion, that nothing could be better than their own snug way of creeping into certain establishments, and when there, of conjuring the money from the pockets of their disciples into their own. They started up in astonishment when a voice was raised against their supineness and venality, as if some demon had disturbed their sweet repose. They liked not to have their merry-making disturbed by the rude voice of truth, but would fain watch, or rather sleep, over the interests of their own charities in their own way. That small still voice rolled on increasing, until it reached the public ear, and roused the officers of public institutions to a sense of their duties, and of their dangers if these were neglected. They were taught that such things existed in society

as reciprocal duties, and that there was a duty, and a very responsible duty, to be executed by the teacher towards the taught, and that the student expected something more than bits of paper for the large sums extracted from him.

We take to ourselves the credit of having given a new impetus to the medical education of this kingdom. Since the establishment of this work, certain changes have been effected, which it would be difficult to trace to any other influence than that of a weekly medical press. We have had the opportunity of sounding the abuses of office in the ears of the abused two and fifty times in the annual course of the seasons; twelve were not sufficient, even if they had been *well* employed. No, the slothful required to be roused from their slumbers two and fifty times a year before they could be awoke from their long sleep of negligence. Are not certain changes produced in the government of our medical institutions? are not those changes favourable to medical education? have they not been gradually effected in direct proportion to the amount of labour expended upon them by us? are not the reformed institutions most respected and the best supported? It is a matter of observation appreciable by every man, and must be acknowledged by every man, who is free to think and to speak his opinion.

The degree of intelligence now expanded throughout society, has had the most favourable influence on the several branches of science, but on none more so than on medicine. The mystification which once concealed the ignorance of medical men, and at present conceals the ignorance of our lawyers, has, happily for the community, been stripped away, and men now meet each other in society, on the broad ground of common sense. All the most essential points of medicine, like any other science, may be made perfectly intelligible to any man of ordinary understanding; and it is, therefore, easy to show to the public, that the system adapted to general, must be equally adapted to a medical, education. Can men cross the pons asininus without being first taught the difference of acute and right angles? and how can men be turned into society, other than medical dolts, if the means of acquiring the elements of a practical education be denied them? Yet, strange to say, this has happened for years, we may say for centuries; and because we pointed out the absurdities of such a procedure, we had all the slanderous tongues of the hydra of aristocratic indolence barking against us. We never did feel dismayed; we felt our cause good, and were assured that it would prosper. We are encouraged by what has been accomplished to attempt more, and we shall not rest until medical education has undergone a strict and thorough reform; until the proper means be rendered available in the freest manner; until the proper measures be adopted, to secure support to the deserving and industrious man; until we can say of the appropriation of public patronage, *bene merenti faciendum curavit.*

We are glad to notice any improvement in the discipline of our hospitals, however slight, as it shows that the good work of reform is going on. At the Middlesex Hospital, we find the access of the pupils to the patients rendered more easy; we find that they can now see important cases every day, instead of twice a week, as formerly; we find a list of the accidents hung up in the waiting room, instead of being studiously concealed, as formerly; we find the post mortem examinations announced in a becoming manner in the same place, instead of being smuggled through, as formerly; we find clinical lectures announced by Mr. Bell, and if we can see that Mr. Bell discharges his duties in an open and honest manner, we shall be the first to award him that praise which his acquirements ought to procure for him. Our censure shall never be perspective; we have said honestly what we have thought of facts, as they have

fallen under our notice, and so we shall continue to do. Othello's language is ours. At the Westminster, too, although there are some old gentlemen, who like the broken teacups on the village shelf, hold their places more for ornament than use, there are others who have the capacities to become good surgeons, who are willing to learn, and are ready to communicate what they know. A book is kept by one of the surgeons, in which the best cases falling under his care are recorded; a very laudable thing, and therefore deserves to be mentioned. Mr. Guthrie's book is kept in the pupils' room, and is open to their inspection at all times. Why do not the other surgeons do the same? The trouble is very little to them, and the advantage to the students very great. This practice is quite novel in the West End Hospitals; no such thing was dreamed of, until lately. The pupils pay no sixpences to witness a post-mortem examination, the fees paid for the hospital practice being considered a sufficient title to the FREE entrance to the dead-house. There is no such *tax upon pathological study* at the West-end hospitals. St. George's is still under the evil genius of Bacchus, we may say of Momus; for the individual who nods the law there at present, attends to little more than drinking and sleeping. It is high time for the surgeons of St. George's to bestir themselves, if they wish the profession to remember that any such hospital exists, or if they wish the public to build them another house. We feel glad to strengthen the hands of Charity, but we would see her blessings fairly distributed, and fairly used.

We perceive by the newspapers that Mr. LAWRENCE has resigned the situation of Surgeon to the LONDON OPHTHALMIC INFIRMARY, Moorfields. Several candidates have already started for the office, of whose merits we shall at present be silent; but as this Institution has been the seat of a vast deal of shuffling and intrigue on the part of those persons who have conducted its affairs, we earnestly entreat the Governors to be cautious in giving their votes to any candidate, until they are fully satisfied that he is qualified for the proper execution of those duties which it will be his province to discharge. Let them look with suspicion on the recommendation of the *present Committee*.

DEATH OF DR. BARCLAY.

THE professional world has lately lost one of its brightest ornaments, in the person of Dr. JOHN BARCLAY, the celebrated teacher of anatomy in Edinburgh, who died at his house in Argyll Square, on the 21st of August. Dr. BARCLAY was originally destined for the Church, but turning his attention to physic, he took his Doctor's degree in 1796, and soon after commenced the teaching of anatomy and surgery, in which he was eminently successful. Few teachers have left behind them a greater reputation, and few authors more durable proofs of industry and talent. His works on *Anatomical Nomenclature, on Muscular Motion, on Arteries, and on Life and Organization*, are too well known and valued, to stand in need of our eulogy. The Nomenclature, which applies to the same parts *in all positions of the body, and in all animals*, cannot be too highly prized, or too implicitly followed, if precision of language be desirable, in anatomical disquisitions, whether human or comparative, in the lecture-room, or in books. Dr. BARCLAY's Museum, which, according to the Edinburgh Journal of Science, is given to the College of Surgeons of that city, "with a reservation in favour of his successor, Dr. KNOX, is a noble monument of that zeal for the science he taught, with which he not only animated himself, but inspired his auditors." His age was sixty-six.

To the Editor of THE LANCET.

SIR,—Should you consider the following case worthy a place in your widely circulated Journal, you will oblige

Your obedient servant,

THOMAS FRYER,
Surgeon.

Bath-street, Bristol,
Sept. 1826.

The case that I have to present to the notice of your numerous readers, is one, in my opinion, of a very interesting character, as it will give us some idea how far disease may extend itself in the body, without producing any very considerable pain or anxiety, and disorganize those parts more immediately subservient to life, to a very great extent, without producing a total cessation of animal existence, until a very protracted period after the disease has actually set in. The following case occurred in the person of a youth ætat. 7 years and 5 months, whom I was requested to visit in this city, in March, 1825. He had, previous to my seeing him, laboured under slight attacks, as was supposed by the parents, of cold, followed with considerable weakness and inactivity of mind, unusually shown at his age. There was a fullness observed in the bowels, with other symptoms, that led me to consider the mesenteric glands to be the seat of disease, which in a short time became more evident. Alterative doses of mercury, with occasional stomachic aperients, with other means, were resorted to, together with local abstraction of blood by leeches, &c., these were varied from time to time, as the symptoms indicated; he was seen by several eminent physicians during the progress of his complaint, which resisted every plan of treatment proposed. The disease advanced progressively, till death put a period to his existence in July, 1826. The liver could be distinctly felt through the integuments, advancing into the hypogastric region on the one side, and the spleen descending on a parallel in the opposite side, and very considerably indurated. Some months previous to his decease, œdema of the lower extremities commenced, with an effusion of water in the bowels, forming ascites. It was considered necessary to relieve the symptoms by an operation; I tapped him about six weeks before his decease, and drew off three quarts of water; the relief was almost immediate; but in the course of a week he had increased nearly to the same size; he became excessively irritable, had a quick pulse, and occasional hæmorrhage from the nose up to the period of his dissolution.

Post-mortem Examination.—Body extremely emaciated, with a very considerable enlargement of the abdomen, and fluctuation of a fluid within. Having first removed six pints and a half of turbid serum from the cavity of the abdomen, I commenced an incision from sternum to pubes; on turning back the parietes, the liver was seen to occupy the right hypochondriac region, and extending into the left; the left lobe very much enlarged, and reaching as far as the spleen. The posterior surface of the liver thickened and indurated, the right lobe advancing into the hypogastric region. Liver of a dark clay colour, with a very remarkable change in its structure, and studded with incipient tubercles, with a sealing up of the *pori biliari*; exsanguineous in appearance; weight three pounds and a half. The spleen situated in the left hypoch. region, extending from underneath the false ribs, nearly in a parallel with the right lobe of the liver, reaching as far as the hypogastric region; there was very considerable adhesion to the left side, external appearance resembling *mottled soap*, and considerably indurated, not yielding to pressure, partaking of the same characteristic disease as that of the liver, viz. tuberculated and exsanguineous; weight 21 ounces. On the left head of the *pancreas* in proper capsules, were situated two supplementary spleens about the size of walnuts. The left kidney considerably enlarged and otherwise diseased, having lost its lobulated character. The mesentery thickened and indurated. The mesenteric glands enormously increased in magnitude, and consequently arresting the progress of chylification, so that the lacteals could be distinctly seen meandering over the convolutions of the small intestines, completely filled with chyle: on puncturing one of these ducts, a portion of this milky fluid exuded. I regret to say, I did not, from peculiar circumstances, examine the thorax, though there were no symptoms during life that indicated disease of the chest, &c.

To the Editor of THE LANCET.

SIR,—My attention having been directed, in an especial manner, to two circumstances in the medical periodicals of the present month, I solicit your courtesy in favour of a constant reader, for permission to occupy a small space in the ensuing Number of your valuable hebdomadary, to give currency to my thoughts.

1st. The Trustees of the Hunterian Museum have, in their zeal for medical science, lately opened the portals of the Royal College of Surgeons twice every week, to the members of that college, and to *Fellows* of the College of Physicians, also *to persons*

recommended by members of these corporations. This increased facility is, as far as it goes, commendable; but, in the name of common sense, and of common decency, why is leave of entrance restricted to *Surgeons*, and *Fellows* of the College of Physicians? Let those questions be fairly put to the Trustees *generally*, and its decision will be no longer governed by the dicta of a few capricious doctors. We shall then see regulations enacted for the benefit of the whole profession. In the mean time, I desire to state the following questions to the Trustees. Is not the Museum *national* property? Was it not purchased with the people's money, for their use and improvement? If so, ought it not to be equally accessible, as in other countries, to persons of every denomination, who take an interest in the cultivation of anatomical knowledge? Besides the Corporation of Surgeons, and the little junto of the Fellows of the College of Physicians, are there not in London a numerous list of physicians denominated licentiates, and a much longer list of physicians resident in the counties of England, Scotland, Wales, Ireland, and other divisions of the imperial dominions, who have actually contributed pecuniary aid in the form of taxes to realise this noble establishment? Unless the medical Trustees venture to deny the above position, I shall be glad to learn on what plea of utility, of equity, or of right, they have closed the door against this meritorious class of their brethren. Is it because, refusing to become parties to their own degradation and dishonour, they spurn connexion with the College as it is now managed?

The Licentiates, and those Doctors of physic who disdain to become licentiates, are, from education and acquirements, entitled to the greatest consideration, and will not veil their bonnets to any of the college monopolists. They derive their respectability and privileges from the highest authority—their medical degrees obtained at universities, where the healing art is carefully taught and practised. The Fellows, on the contrary, procure theirs from Oxford and Cambridge, where the most diligent students are but very scantily supplied with medical lore.

I will not detain your readers with the encroachments of the Fellows, or complete diversion of the College from their original purpose of benefiting the public, to the aggrandisement of their own members. Both are ably explained in "An exposition of the state of the Medical Profession in the British dominions, and of the injurious effects of the monopoly, by usurpation, of the Royal College of Physicians in London," lately published, and to which I beg leave to refer.

So long as these illiberalities and perversions are suffered to continue in force, physicians make an ungrateful return to Alma Mater by stooping to accept licenses, rather than contend openly for an equal participation of rights. Let them found their claims entirely upon their degrees, and reject the license of the College as derogatory and useless. Such a course would be manly—would be dignified, and would be effectual in subduing the College and purifying their measures. It has already been successfully adopted by some respectable practitioners, who have signified their readiness, whenever called upon, to try the validity of certain excluding and offensive by-laws. This offer having been *repeatedly* declined, proves tacitly the admitted nullity of their boasted pretensions.

In answer to arguments like these, I have heard it said, that a physician, on fixing in London, is obliged, in his own defence, to become a licentiate, otherwise the Fellows would refuse to meet him professionally, and this determination would blight his fairest prospects in life. My reply is simply, do they actually refuse, or only fume and vapour? Will the stiffest of them decline a fee, rather than commit a breach of etiquette? The octogenarian, Dr. Hamilton, is able to solve both difficulties; or reference may be made to Dr. Merriman, to Dr. Harrison, and many others, who laugh at the College anathemas, and are still in possession of the field.

Really and truly, Sir, this is all fudge; no physician, whether licentiate or non-licentiate, has any favour to expect from truckling to the Fellows. They are too firmly bound, and engaged to each other, to forward his views. The compact, which connects them together, necessarily places them in perpetual hostility with the Licentiates. This community of design, more than any other circumstance, enables them to triumph over the *disunited licentiates*. When they and their true brethren, the *independent* physicians, can be made to understand their own interests, and to associate for common objects, the spell will be broken, and the talisman change sides. The Fellows, aware of their delicate position, and well understanding the maxim "divide et impera," occasionally elect some feeble licentiate into their body. This paltry boon, which should be scornfully rejected, appears to stultify that class. Self-love makes each of them fancy, that he shall be the distinguished candidate; and a few ambiguous hints, artfully scattered by the high priest, confirm the delusion. In the foregoing remarks, I neither allude to Dr. Southey, who, it is said, owes his introduction to an exalted personage, nor to Sir James Macgregor, who was admitted a Fellow, according to common report, in order, through his in-

fluence, to draw the army physicians into the college net.

Were the physicians in London, and the country, fully impressed with their own power, and determined to confine *consultations to individuals of their own order*, the golden current would speedily flow into another channel, and the sick would gain considerably by the change. A resolution of this kind, would work like a charm upon both the Fellows and Licentiates. This motive for action is no longer utopian; I anticipate its speedy adoption after an union is formed. The Licentiates, goaded, insulted, and debased, already manifest some internal heavings, which promise to display themselves in outward acts.

They are aware that when any office of honour or emolument opens to view, it is immediately forestalled by one of the Fellows. Should an hospital, for instance, become vacant, a College tyro rushes into the arena, and is always victorious. Not, certainly, by his native prowess, but through the confederated aid of his colleagues. The interests of the sick are the least considered. If examples are required, look to what lately occurred at the Middlesex, St. George's, the Westminster Hospitals. &c. As to Bartholomew's, it has long been a close borough. Even the dispensaries have, of late, been too successfully invaded.

What, besides a well managed combination, raised the present examining physician of the East India Company to that situation? a person who had never crossed the line, or, perhaps, traversed the channel. Such selections are quite preposterous, and if the subject did not excite far other feelings, would deserve to be treated only with ridicule or contempt. Nothing can be conceived more absurd than to choose for examiners of medical men destined to hot climates, persons practically ignorant of the topics on which they are to examine, in preference to others well acquainted with tropical climates, and their diseases, and who have, moreover, given abundant proofs of medical talent and erudition. I shall only mention amongst them Dr. Maclean, and Dr. James Johnson, as men in whom the magnificent merchants of Asia might safely confide, if saving of lives merely were their object.

The same principle will explain the regulation lately adopted for choosing the Royal Physicians, and the almost total exclusion of Licentiates from the higher walks of society. It is time that the public should take some cognizance of these matters.

2d. The appointment of a commission to investigate and report upon the constitution and direction of the University of Edinburgh, and the other Scottish Universities, will form a distinguished era in the literary history of that enlightened portion of the United Kingdom. It is, indeed, an auspicious commencement, and ought to be joyfully hailed in every quarter. Whatever is found amiss will, I trust, be effectually corrected, and these ancient institutions restored to their original splendour. Medical diplomas will then deservedly rise in public estimation, because they will cease to be objects of disgraceful traffic, as they unfortunately have been in some of the minor universities.

Henceforward they will become, what they ought always to have been, honourable distinctions, and real passports to professional confidence.

The conclusions at which I wish to arrive from the foregoing premises, and to impress upon your readers, may be communicated in few words.

1st. If the Licentiates, the permissi, the alieni homines, (such are the humiliating appellations, in college phraseology, for an highly meritorious description of practitioners,) really wish to recover their lost privileges, and former stations in the kingdom, they must fortify themselves by associating extensively for determinate objects. It has been clearly proved, by their abortive efforts, that individually they can never succeed. A respectable society of Licentiates, supported by the provincial physicians, would immediately assume an imposing attitude, and claim attention from the ruling authorities. The trite fable of the old man and bundle of sticks, is as true as it is appropriate to our purpose. In addition to the efficacy of mere combination, gentlemen should also call to mind the close connexion of country physicians with members of parliament, and the consequent respect which they can command in the senate.

2d. Moreover, since inquiry is abroad, and the Legislature will be applied to in the ensuing session for new enactments in favour of general practitioners and surgeons, it behoves the Licentiates and independent Physicians to be prepared to march into the field *en masse*, with their several detachments, or they will assuredly be vanquished in the approaching conflict, and what is worse, the public will be left dreadful sufferers by the defeat.

3d. The tendency of this address is neither to excite clamour, nor to encourage prejudices. Its purport is simply to induce the *unprotected* Physicians to combine, for the recovery of their lost privileges, and to obtain such additional ones as will conduce equally to their own benefit, and that of the public. Surely, Sir, these are praiseworthy motives, and for the accomplishment of which, the most diffident may safely exalt his voice. In merely advocating our own rights, we cannot be accused of invading the prerogatives of others.

The Fellows, the Surgeons, and the Apothecaries, have each of them spacious Halls to meet in, while the alieni homines have no place of assembly to converse together, and discuss measures *for the general good*. It is high time to correct this fundamental defect, and to construct a suitable institution, where the provincial and metropolitan physicians may not only mature their plans in private, but renew their friendships, and revive the memory of past scenes. A trifling contribution from each member would suffice to complete the establishment. The times are auspicious.

Let us trifle no longer, but seize the opportunity, or it will be lost perhaps for ever.

I am, Sir,

Your very obedient servant,

A PHYSICIAN.

HOSPITAL REPORTS.

GUY'S HOSPITAL.

CANCEROUS DISEASE OF THE FEMALE MAMMA, OCCURRING AT THE AGE OF 26.

R. B., ætat. 26, an unmarried woman of dark complexion, and not unhealthy appearance, came into the Hospital on 30th of August, under the care of Mr. Key, on account of disease of the left breast.

She stated that the disease was of eight months standing, and that she first perceived a hard moveable tumour under the integuments, of about the size of a hazel nut. The disease went on gradually increasing, until within a few weeks previous to admission, when its growth became rapid, and she had frequent lancinating pains in the part. Leeches and plasters were applied under the direction of her medical attendant, but without being productive of any benefit.

There was a tumour occupying the inner half of the left mamma, very firm, and not yielding to pressure; irregular on its surface, having several distinct but small projections; it was not attached to the parts beneath, nor was the nipple retracted. The skin was discoloured, almost over the whole surface of the tumour; the cutaneous vessels loaded, and large veins running over the breast. Near to the sternum, there were numerous minute subcutaneous tubercles. The glands in the axilla were not enlarged. The pain experienced was of a lancinating kind, occasional, and not severe. The patient stated, that her general health was, and always had been, tolerably good; the catamenial discharge had not been regular for some months.

Mr. Key having ascertained the particulars enumerated above, observed, that he considered the disease to be of a malignant nature; although occurring at an unusually early period of life. The patient was directed to apply cold lotion to the part; in the mean time, it having been intimated to her that it was necessary to undergo an operation, she left the Hospital abruptly.

CASE OF IRRITABLE DISEASE OF THE MAMMA.

By way of contrast to the former, we here report a case of irritable disease of the mamma, occurring in a young female.

M. Pluckrose, ætat. 27, an unmarried woman, of delicate appearance, admitted on 9th of August, on account of disease of the right mamma. On examining the part, the whole of the breast was found to be so exquisitely sensible, that the patient started back on its being slightly touched, and she said that she could scarcely bear her clothes to press against it. The pain, she said, extended from the breast to the shoulder, and down the arm to the ends of the fingers. The disease had existed for several months, and her menstrual discharge during this period, has always been very small in quantity. About the time at which the catamenia appear, the pain in the breast is always very much increased; indeed so much, that it amounts to agony.

The plan of treatment pursued in this case, consisted in the application of a plaster of belladonna to the breast, the exhibition of three grains of blue pill at bed time, and five grains of compound rhubarb pill twice a day, for a fortnight. The mixture of myrrh with iron was then exhibited, and the former medicines omitted. The patient, under this system, gradually improved; the healthy functions of the uterus were restored, as was evinced by the increased flow of the menses. The pain and sensibility of the breast gradually diminished, and the patient was soon dismissed from the Hospital, cured.

Mr. Key's admission of cases on 30th of August, presented nothing worthy of notice, with the exception of the case of cancerous disease of the mamma, reported above.

ST. THOMAS'S HOSPITAL.

CASE IN WHICH THE URETHRA WAS LACERATED FROM A VIOLENT BLOW IN THE PERINEUM, WITHOUT ANY EXTERNAL WOUND.

William Somersby, ætat. 16, of spare habit, was admitted into the hospital on the evening of the 17th of July, under the care of Mr. Travers, in consequence of severe injury to the perineum, which he had received about two hours previously.

He stated that he was standing on some rails, being employed in cleaning a window, when his foot slipped, and he fell astride the rails with great violence. He immediately experienced great pain in the perineum, and soon afterwards he felt a strong desire to void his urine, which, however, he found himself incapable of doing, and in consequence thereof, sought relief at the hospital.

The seat of injury being examined, it was found that the perineum, together with the scrotum, was much swollen and discoloured from ecchymosis; there was also great tenderness evinced on making pressure. The bladder did not appear to be much distended, although the desire to void his urine was urgent.

The plan of treatment pursued in this case was as follows:—The patient was put into the warm bath, and attempts were made for a considerable length of time to introduce the catheter, but without success; the instrument could be passed on without obstruction, beyond the arch of the pubes, and as far as could be judged, into the bulbous portion of the urethra. At this point it appeared to deviate from the proper course of the canal, occasioning great pain to the patient. The point of the catheter could readily be felt, by introducing the finger into the rectum; but it could not be passed beyond the point of obstruction referred to.

The swelling of the parts had apparently much increased, the perineum and scrotum being now greatly distended. Under these circumstances, and as it was found impracticable to pass an instrument onwards to the bladder, Mr. Travers determined on laying open the parts in the perineum. With a common scalpel he made an incision through the integuments in the line of the raphe, extending from the under part of the scrotum, nearly to the fore part of the anus. By a second incision, he then cut through the fascia perinei, and these being divided; several coagula of blood were removed. The swelling of the parts was entirely attributable to the extravasation of blood; *not a drop of urine had escaped.* A catheter was now introduced at the orifice of the glans, the point of which made its appearance through the wound in the perineum, evidently showing that the urethra was extensively lacerated, if not completely torn through.

The next object consequently was to find the lower orifice, in order to be enabled to carry the instrument onwards into the bladder. A female catheter, at length, after much difficulty, was introduced through the wound in the perineum, and a large quantity of clear urine drawn off.*

The female catheter was subsequently removed, and an elastic gum, male catheter, was passed along the penis into the bladder, which being properly confined by tapes, the patient was carried to bed. He expressed himself as feeling chilly, and the surface of the body was cold, with a small but somewhat quickened pulse; a small quantity of wine was, therefore, administered to him.

July 18th. The patient, to-day, has some febrile excitement; the pulse is about 96; the skin hot, and the tongue covered with a thin white fur. He obtained a few hours sleep during the night, and says that he has no pain. He has not passed any urine since the operation. Ordered to take a dose of castor oil.

19. Subsequently to our report of yesterday, about a pint of urine was passed through the catheter, the patient lying on his side. He slept well last night; the bowels have been relieved twice from the exhibition of the oil. There is a slight discharge from the wound, which has a healthy appearance, and there is less constitutional excitement than yesterday. The urine passes freely through the catheter.

23. The patient appears to be, in every respect, going on well. The pulse is moderate; tongue clean, and bowels regular. There is a copious healthy discharge from the wound, and the urine is passed several times, in the course of the day, through the catheter.

26. Our last report of the condition of the patient was so favourable, that we did not visit him until to-day. We learn that he passed his urine, as usual, through the catheter, on the evening of the 18th; but, on

* The difficulty experienced in finding the lower orifice, is explained by observing that the urethra being completely torn through, the lower portion, by virtue of its contractile power, became considerably retracted. Hence the attempt to pass the catheter previous to making the incision in the perineum also failed.

the following day, it was observed that the sheet was wet, and it was apparent that the urine had escaped through the wound in the perineum. The catheter retains its situation in the bladder, but there is no flow of urine through it. The dresser (Mr. Solly) surmising that it had become clogged with mucus, very properly threw in some warm water with a syringe.

28. The urine still continues to pass by the wound, and not any portion through the catheter. The wound has apparently a healthy granulating surface, but is very sluggish in its disposition to heal. There is no constitutional disturbance, and the patient says that the urine, in passing through, does not occasion the wound to smart.

From the date of the preceding report (July 28,) to Sept. 11, the catheter was retained in the bladder, notwithstanding that the urine passed through the wound, and by the side of the catheter, scarcely a drop coming through the instrument. The wound remained almost stationary during the above time,—a period of six weeks; at length Mr. Travers thought proper to direct the removal of the instrument. This was effected with some little difficulty, owing to the incrustation on the end of the catheter, which was very great. A small quantity of blood issued from the orifice of the glans, and the patient passed bloody urine twice afterwards; his general health is very good; he complains of the confinement as exceedingly irksome.

Sept. 16. Only a small quantity of urine now passed through the wound, and it is certainly healing fast.

Sept. 22. The wound nearly healed.

CASE OF DISEASE OF THE TESTICLE.—OPERATION OF CASTRATION.—MORBID APPEARANCES OF THE PART ON DISSECTION.

Hugh Welsh, 53 years of age, a man of sedentary habits, spare and unhealthy in appearance, was admitted into the Hospital on 30th of March, under the care of Mr. Travers, on account of superficial ulcers situated on the right thigh and knee, and on the left leg.

He stated, that for the last twelve years he had been subject to sores, more especially affecting the neighbourhood of the joints, and in confirmation of this opinion showed several scars, near the elbow, knee, and ancle. He affirmed that he had never suffered from any form of venereal complaint.

Mr. Travers directed five grains of blue pill to be taken at bed time, and a mixture with sarsaparilla and nitric acid to be taken three times a day. The ointment of zinc to be used as a local application.

Under this plan of treatment, in the space of a few weeks, the patient had so far recovered that he was about to leave the Hospital.

On going through the ward, however, on the morning of the 4th of June, we found him complaining of chilliness, which he attributed to the circumstance of the window having been left open when he was asleep, and in a few hours afterwards he had a smart accession of fever. This existed for several days, and on the morning of the seventh, in addition to the febrile symptoms, the patient had great pain in the left testicle, which was already hard, and tender to the touch. Leeches were now repeatedly applied; the horizontal position observed, with due support of the parts, and the use of cold sedative lotions. The bowels were properly regulated, and five grains of the compound calomel pill taken three times a day. Notwithstanding the use of these means for about a week, the testicle continued to increase in size and pain.

June 16. The integuments covering the scrotum are much inflamed, being vividly red and having a shining appearance. The pain is somewhat lessened, and on examining the part to day there is an obscure sense of fluctuation, and there are two or three projections on the surface of the testicle, which feel softer than the remaining portion. Ordered,

Calomel, two grains;
Tartar emetic, a quarter of a grain;
Half a grain of opium;

to be taken at bed time.

Omit the compound calomel pill.

20. The whole of the testicle has now become very soft. Mr. Travers to-day made an extensive incision through the integuments of the upper part of the scrotum, on the left side, down to the tunica albuginea. There was a slight escape of matter, but the swelling of the scrotum appeared to be principally dependant on a thickened state of the coats of the testicle. On making an incision through the tunica albuginea, a portion of the substance of the testicle presented itself, bearing a healthy character, whilst at another part suppuration was going on. Ordered to have warm linseed meal poultices constantly applied.

21. Since the incision, the patient has felt less pain in the part, and he passed a good night. There is a scanty discharge of thin pus from the wound.

23. The patient is certainly much relieved, but the tunica albuginea, exposed by the incision, is of a dark colour, and the whole part is passing on to suppuration.

25. Much the same. Mr. Travers determined on removing the testicle, to which the patient assented, and the operation was consequently performed in the usual manner. The septum scroti was found to be so much thickened and diseased, that it was thought proper to remove it, which of course exposed the testicle of the opposite side. Several bleeding vessels were secured, and the wound was closed by means of strips of adhesive plaster.

26. Has passed a comfortable night, and is not in much pain. Pulse 98; tongue slightly furred.

28. In every respect doing well.

30. The wound was examined to-day; it appears to heal slowly; this is perhaps attributable to the retraction of the edges, which is considerable. The patient's general health has much improved.

July 4. The wound healing slowly. The ligatures have, with the exception of one, come away. Ordered a mixture, with decoction of bark, an ounce and a half; extract of bark, ten grains; to be taken three times a day.

21. The wound quite well. The patient dismissed from the Hospital.

Dissection of the Testicle.

The greater part of the internal structure of the testicle was found to be converted into a yellowish, pulpy mass, which was more or less mixed with pus. The coats of the testicle were much thickened.

Mr. Travers remarked, that in its present stage, the disease could not be considered as bearing a malignant character, but if it had been suffered to remain, it was his opinion that it would have become so, and probably fungus would shortly have appeared. Besides, it was evident that the testicle was so completely changed from its natural structure, that its secerning powers were destroyed, and in addition to this, the man's general health was materially suffering.—These, Mr. Travers remarked, constituted his reasons for performing the operation.

OBSERVATIONS ON THE PULSE.

Dr. Parry, in his "Elements of Pathology," remarks, that the condition of the radial, or any other pulse, taken singly, is a "deceptive criterion" as to the state of the heart's action. For the pulse at the wrist may be weak and small, whilst that of every other artery of the body is strong and bounding. This condition of the radial pulse is referrible to various causes. It may exist in an healthy state of the body, arising from an unusual distribution of the arteries of the arm, or from some mechanical obstruction to the flow of blood*. It may also, and frequently does occur, in the progress of disease; and this irregularity of the circulation is then dependent on certain vital properties of the arteries themselves, existing independently of the heart's action.

Under these circumstances it must be confessed, that the pulse is, as Celsus aptly observes, "fallacissima res;" and hence it points out to us the necessity of *particular*, in contradistinction to *general*, diagnosis. A case which occurred at the Hospital during the last week, has led us to offer these remarks.

A man was brought into the Hospital who had received a severe contusion on the left ilium and side of the abdomen, from the fall of a heavy stone. The pulse, as felt at the left wrist, was so exceedingly small, it was scarcely distinguishable, and this continuing for many hours, it was supposed that a rupture of some portion of the intestines had taken place. Stimulants were *very freely* administered. On the following day the same condition of pulse prevailed on the left side; there was, however, no further evidence of the heart's action being so much lessened; on the contrary, the surface of the body was hot, the tongue furred, and the patient complaining of pain in his head. The pulse at the right wrist being now felt, it was found to be so full and strong, that venesection was deemed requisite.

The patient has now nearly recovered, but the left pulse remains the same, being very indistinct.

Mr. Morgan's admission of patients on Wednesday, August 16th, only furnished us with three interesting cases—empyema, fungoid tumour of the side, and gangrene of the foot.

The patient affected with empyema remains in the Hospital under treatment; we shall take an opportunity of giving a full report at the termination of this case. We may here remark, that upwards of two hundred ounces of matter have already been taken from the chest. As some of our readers probably may feel desirous of seeing the patient under these circumstances, they will find him at No. 19, in Job's Ward.

---

* Mr. Allan Burns had a preparation in his Museum, in which a small slip of muscle was seen passing over the brachial artery, and evidently impeding its action in certain positions of the arm.

FUNGOID TUMOUR OF THE SIDE.

Dennis Craine, ætat. 32, of light complexion, spare habit, and unhealthy in appearance, was admitted under the care of Mr. Morgan, on account of a tumour on the right side of the abdomen.

He stated, that he first perceived a small swelling above the spine of the right ilium, in the month of June last; it was, however, attended with so little inconvenience or pain, that he followed his usual employment, that of a bricklayer's labourer, until a month before his admission. He then felt what he described as a stitch on the side, which prevented him from using any active exertion. The swelling had now attained considerable magnitude. Mr. Morgan found, on examination, that there was a tumour of the size of a double fist, extending from the cartilages of the lower ribs, in an oblique direction, and reaching over the spine of the ilium. It was soft, elastic, and smooth on its surface; and the integuments covering it were not discoloured. The swelling was not moveable, being apparently attached at its base to the oblique muscle of the abdomen.

Mr. Morgan thought proper (we should be glad to know his reason for taking such a step) to puncture the tumour, when a thin bloody fluid, issued from the orifice.

On the following day there was great constitutional disturbance; the pulse was very quick, the tongue coated with a brown fur, the skin hot, and countenance indicative of anxiety. The appearance and feel of the tumour were also changed; the integuments covering it were inflamed; and it had a crackling emphysematous feel. From the orifice there was a considerable discharge of a thin, bloody fluid, mixed with air. He was directed to take a dose of saline mixture, with thirty drops of the tincture of henbane, every six hours, and a grain of calomel, with a similar quantity of opium, at bed-time.

19. The constitutional excitement remains unsubdued. The discharge is somewhat altered in character, resembling coffee-grounds or port-wine lees, and it is offensive to the smell. Linseed-meal poultices are applied to the parts.

24. Our daily reports on this case from the date of the last, show that he continued much the same with respect to his constitutional symptoms. The skin covering the tumour is certainly more generally discoloured; the discharge is copious and ill-conditioned. Mr. Morgan to-day introduced a bistoury into the orifice of the tumour, and freely divided the integuments both upwards and downwards, and now making pressure around, a large quantity of soft, fungous matter issued out. Ordered to take porter, with a generous diet. Cold linseed-meal poultices to be applied over the tumour.

26. Progressively becoming worse. Ordered eight ounces of wine daily.

31. Pulse very quick; tongue furred; countenance sunk, with general emaciation. The same brain-like matter, with the fluid resembling wine-lees, are still discharged in large quantities.

Sept. 7. Evidently sinking. We have visited him daily since the last report. Nothing occurred worthy of note until yesterday, when he was attacked with diarrhœa.

Ordered half a drachm of the opiate confection, to be taken three times a day in a wine glassful of infusion of cascarilla.

13. Moribund.

The friends immediately removed the body, and would not permit of its being examined.

The case of gangrene of the foot terminated fatally a few days after admission. The patient was a poor, half-starved wretched woman, and the disease appeared to be the result of such a condition. Stimulants, such as brandy, wine, capsicum, ammonia and musk, were freely exhibited.

ST. BARTHOLOMEW'S HOSPITAL.

CASE OF DISEASE OF THE VERTEBRÆ OF THE NECK, AND SUBSEQUENT BONY UNION BETWEEN THE THREE FIRST VERTEBRÆ, AND BETWEEN THE ATLAS AND THE OCCIPUT.

On Wednesday, Aug. 17, Mr. Lawrence brought a preparation to the hospital for the purpose of showing it to the pupils, and of explaining its previous history. The case had been one of considerable duration, but not having been under his care, he was only acquainted with its general history. The child, at the time of its decease, was twelve years of age; about five years previous, it had been affected with a tumour of considerable magnitude in the neck, with evident fluctuations, and of size sufficient to contain from half a pint to a pint of fluid. The peculiarity in the tumour was, that on pressure being applied, a complete state of coma was produced; at other times the child enjoyed a perfect state of the functions of the brain. The symptoms at the time were sufficient to cause the medical men attending, to suspect it a case of hydrocephalus, and the fluid contained in the tumour to be connected by some extraordinary communication with the brain; this was sufficient reason to prevent them from puncturing it.

After some time, however, the tumour entirely disappeared, and the child in a great measure recovered its health, and went into the country; after a lapse of between two and three years, the patient having entirely recovered from the former complaint in the interim, the lumbar vertebræ were observed to give way, and become distorted; and at a later period, a tumour appeared in the groin, in the situation of a psoas abscess; this was opened, and two or three pints of matter discharged; the child eventually died from exhaustion.

Previous to explaining the preparation, the pupils were desired to remark, that during the whole five years there had not been the slightest paralysis of any of the members—that the child had enjoyed the full use of its mental faculties, and that the head itself had retained its relative situation with the occiput; at least it had not been perceptibly changed. The preparation consisted of the occipital part of the two temporal, and part of the sphenoidal bones (sawn off so as to give a complete view of the foramen magnum, and of the three first vertebræ). The foramen magnum was natural, but at its anterior part, and left side, a thick process of bone, half an inch in length; projected into the cavity of the skull; upon examination it was found to be the processus dentatus of the second vertebra; this was proved by tracing it down to the body of the second vertebra, and also by the fact, that the perpendicular and lateral ligaments, which, in a natural state, ascend from the top of the odontoid process to the edge of the foramen magnum, in the preparation were seen descending from the point of this portion of bone to their usual attachments at the foramen magnum. The form of the process was, in some measure changed, being thinner and more sharply pointed than usual. On looking downwards through the foramen magnum, the rings of the first and second vertebræ were seen very irregularly placed, not corresponding with the foramen magnum, nor with each other, to form an uniformly sized canal, but in such a manner as to contract it to little more than one-third of its usual size. Instead of the posterior part of the ring of the atlas being placed immediately below the edge of the foramen magnum, it was, in fact, contained within the foramen itself; the *right* half of the ring also encroached considerably within the circumference of the foramen; the left half of the ring had been destroyed by the disease; the second vertebra was also displaced, the *left* part of its ring again narrowing the canal, already much diminished by the displacement of the atlas, and by the processus dentatus, which occupied the left side and front part of the foramen magnum. It is proper, however, here to observe, that when Mr. Lawrence received the preparation, the spinal chord still remained in this very confined and tortuous part of the canal, and was sufficiently loose to indicate that it had not undergone pressure. On looking at the inferior surface of the preparation, the atlas was seen to be considerably removed from its relative situation, instead of being placed transversely; with respect to the base of the skull, it was placed obliquely; instead of being articulated with the condyles, it was removed in front of them, and firmly connected, by bony union, with the occiput; its left transverse process had been absorbed, as well as the same side of the ring, to the extent of nearly an inch. From the altered situation of the atlas, and from the considerable destruction which had taken place in it, it will naturally be supposed that the second would also have changed its position; it was removed a little backwards, and from the loss of the left part of the ring of the atlas, it had ascended so considerably, that the upper part of its body was in contact with the edge of the foramen magnum, and its process had passed through it, and projected into the skull in the manner previously mentioned; the vertebra was of its natural size, and did not seem to have suffered from disease; its processes were complete; it was firmly connected above to the atlas, by complete bony union, and below to the third vertebra, which was natural in appearance and position. To show the firm union which had taken place, we may mention, that during the examination, an attempt being made to wrench the occiput from the vertebræ, the whole of these vertebræ came along with it.

This case is exceedingly interesting, showing what a degree of pressure the brain and spinal chord will bear, when that pressure is gradually applied; proving also to what an extent disease may proceed, in parts whose well being is considered almost essential to life, without producing fatal effects; and what power the restorative process of nature has, in accommodating parts to any change disease may produce. The examination explains what appeared so obscure during life; the tumour had contained matter arising from the diseased vertebræ, and had communicated directly with the spinal canal, accounting for the effects which pressure on the tumour produced on the cerebral functions; the disappearance of the tumour arose from the absorption of its contents, consequent on the restorative process which was going on in the vertebræ; and the subsequent restoration of the canal by bony union, accounts for the absence of any return of disease.

It is to be regretted that the state of the brain was not ascertained.